

# THE IP VIDEO EVOLUTION

MOVING TO LIVE MULTI-CAMERA IP VIDEO  
WITHOUT ABANDONING SDI

# IP: THE NEW TECHNOLOGY YOU USE EVERY DAY



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The professional video and broadcast industries are always changing. New formats, new approaches, new consumption patterns—no one can afford to stand still. Most recently, the new news in video and broadcast has centered around innovative developments in IP. The reality, of course, is that IP itself is nothing new.

IP has been the core foundation for networking and data transfer for decades. In the wider world, the vast majority of files, audio and video all routinely utilize IP. Even in the broadcast world, there are few places where IP has not already taken over.

## **IP GOES LIVE**

The critical new factor in the IP discussion is that we're now talking about live multi-camera video—the last bastion of baseband within the industry. As any video professional knows, with live production, there is no margin for error. Live video content must

be transported with ultra-low latency, broadcast-level reliability, and zero compromise in quality.

So it's understandable that video pros are wary of rushing in. Add to this the fact that most video and broadcast businesses have significant existing investments in legacy technologies such as SDI, and it's easy to see that no one is simply going to rip and replace their current infrastructure to embrace IP (no matter how compelling it is).

The good news? With today's technology, you don't need to rip and replace anything.



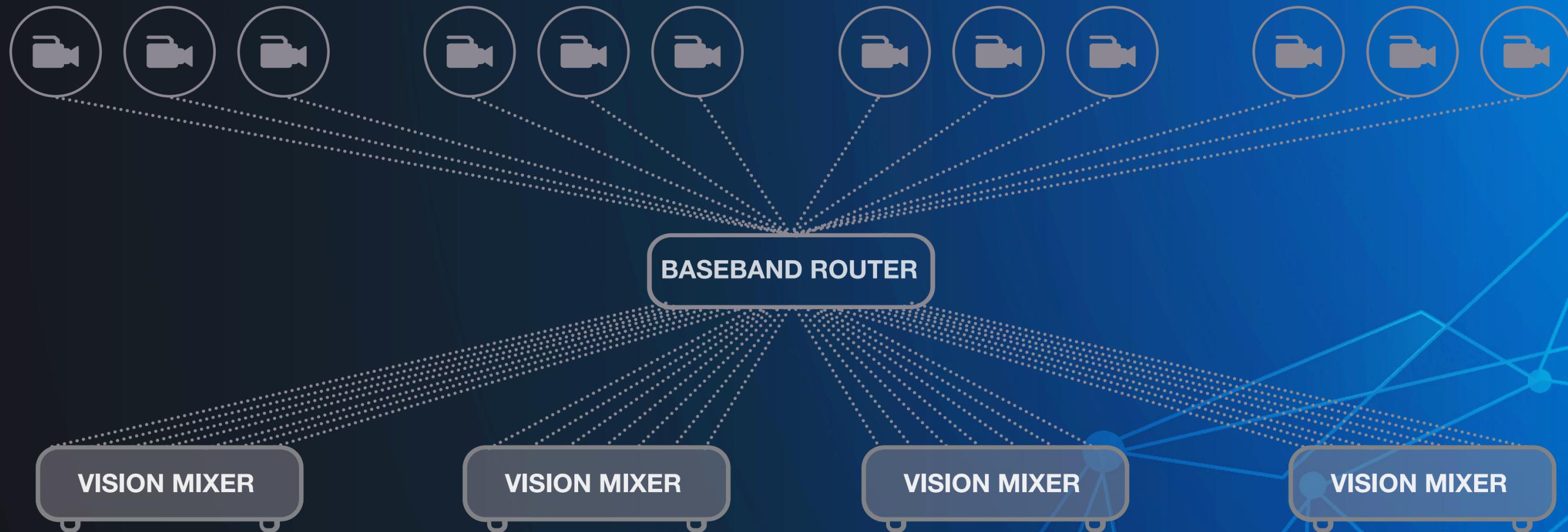
# TRADITIONAL SDI WORKFLOW



In a standard multi-camera, multi-studio setup, each camera or feed is directly connected to a vision mixer and must be re-connected if you want to use it for another location.



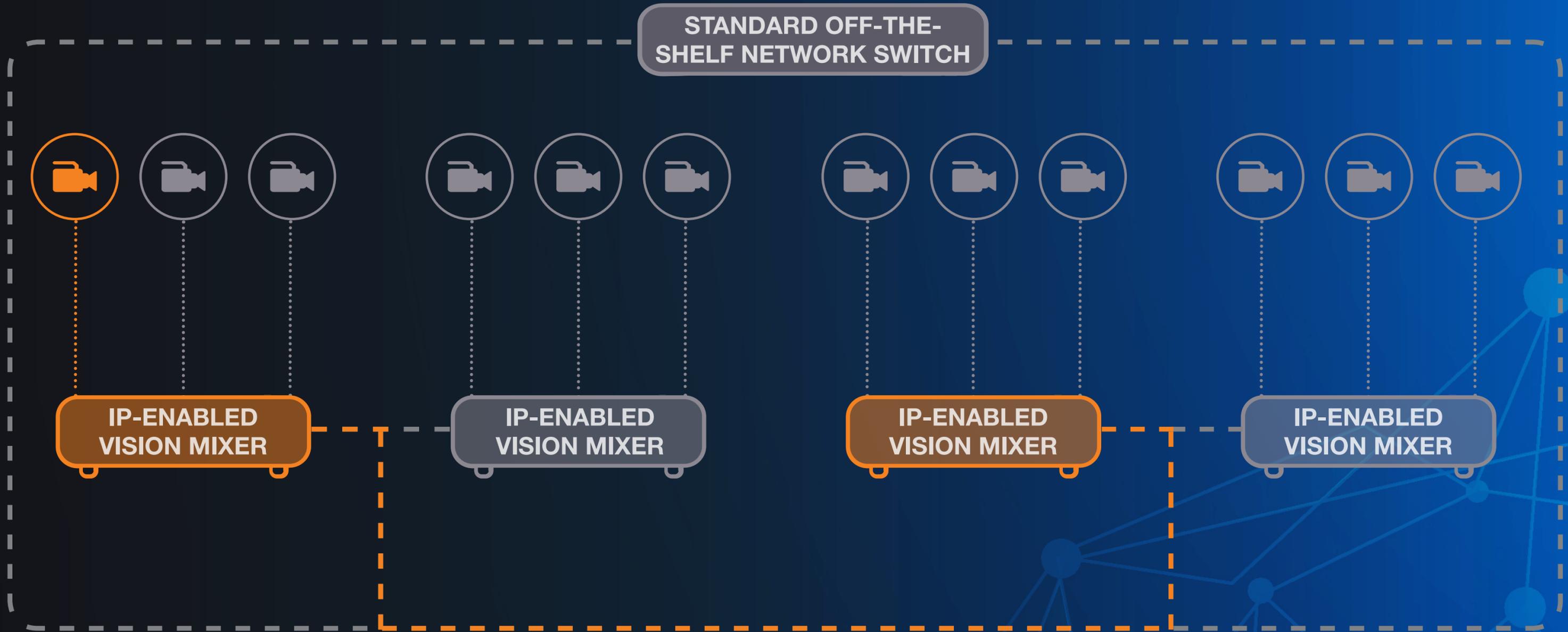
# TRADITIONAL SDI WORKFLOW (LARGE FACILITIES AND BROADCASTERS)



In larger facilities and mainstream broadcasters, cameras and feeds can be shared but only by investing in expensive, fixed capacity baseband routers.



# ADVANCED IP WORKFLOW



In an advanced hybrid IP network, all IP-enabled equipment is instantly available to any device on the network. Even SDI cameras can be accessed via an SDI-enabled IP mixer (such as the NewTek IP Series). And it is all achieved with off-the-shelf networking products.



**THE OPPORTUNITIES ARE CLEAR**



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With any “new” technology, there is always the danger of over-hype. (A danger that’s only matched by over-cautiousness from those not yet ready to enter the market.)

The world of tech is full of companies claiming that their products will revolutionize the industry. That everything will change. That it’s going to be a new dawn.

The reality is often quite different.

## **REAL-WORLD SOLUTIONS TO REAL-WORLD CHALLENGES**

With live multi-camera IP video, however, the available opportunities really do address many of the critical pain-points video pros and broadcasters wrestle with every day—increased infrastructure complexity, demand for more, more, more content, shrinking operational budgets. So while we’ve seen some inevitable hype, in reality, IP is a very practical, highly pragmatic solution.

So what does this mean in practice?

## **CONNECT ANYTHING TO ANYTHING**

Simply, with IP, you can move to a truly interconnected production environment. An environment where you’ll be able to connect virtually anything to anything across your network. Fundamentally, it means you’ll no longer be limited by inflexible point-to-point connections.

So, for example, rather than being restricted to the cameras you have in a specific studio and the edited feeds coming in from elsewhere, you will be able to natively access any camera in any facility that’s connected to your network. This radically increases potential capacity without resulting in an inflexible rat’s nest of expensive point-to-point infrastructure.

There’s no need for workarounds, no need to move kit or patch connections, no need to be constrained by I/O ports.



# THE OPPORTUNITIES ARE CLEAR

## **INCREASED AVAILABILITY FOR LIVE IP VIDEO**

Before now, live broadcast-quality video over IP has been simply unavailable to many in the industry. The kind of equipment required meant significant changes to core broadcast infrastructure. And the choice in solutions has been limited as many manufacturers have been slow to innovate.

Now, however, live IP video is hitting critical mass. The core foundations are in place for reliable, broadcast-quality delivery. The latest equipment offers widespread interoperability with the wider video ecosystem. And there is now meaningful choice in how you can realize real-world benefits right now.

## **AN END TO PROPRIETARY PRICE PREMIUMS**

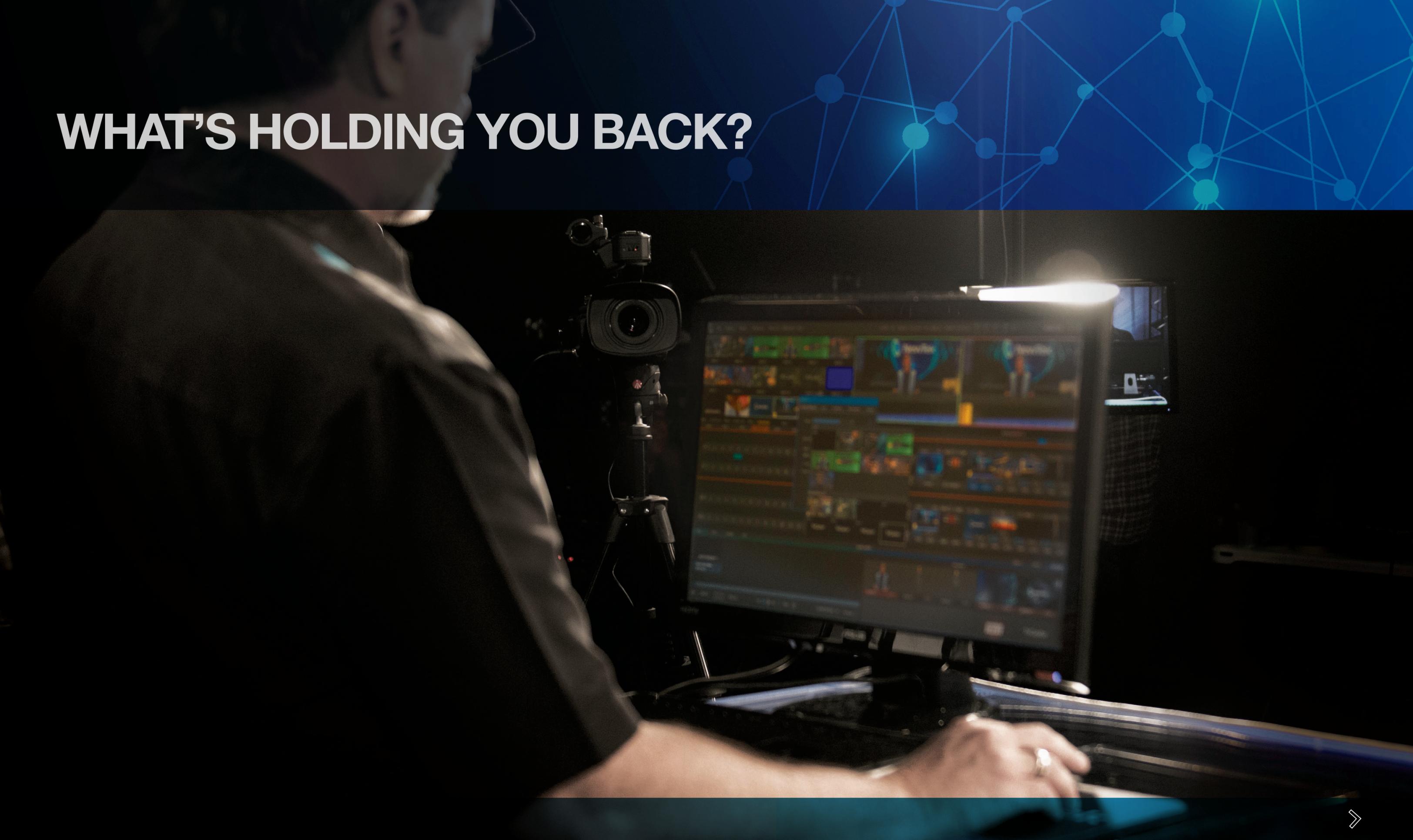
Finally, as a core IT standard used the world over, IP means you can utilize standard off-the-shelf components. This is a critical element as it frees you from being held hostage to the price premiums demanded by traditional proprietary systems.

For video professionals staring down the barrel of seemingly ever-decreasing budgets, the cost efficiencies on both equipment and more streamlined, centralized workflows is a compelling argument for change.

Ultimately, the result is that with IP you can have greater flexibility, at lower cost, all with in-built high availability.



**WHAT'S HOLDING YOU BACK?**



# WHAT'S HOLDING YOU BACK?

With such clear tangible benefits, the move to IP would appear to be an easy decision to make. But with any new technology, there will always be questions that need answering for you to move forward. Live multi-camera IP video is no different.

Typically, there are four core questions that we see from video and broadcast professionals.

## THE WORKFLOW QUESTION

Video and broadcast professionals in the live arena have developed incredibly robust workflows over decades of hard-fought experience. So it's not surprising that some worry about potential disruption that new technology may bring. What's the learning curve? Will there be costly disruption? What will it do to morale?

Fortunately, while the way that IP transports live video is different, the core process of delivering live video content will be reassuringly familiar. IP versions of core tools such as switchers and control surfaces remain largely unchanged in terms of core functionality. However, the power and flexibility they offer means that operational teams will be able to access more content, in more places, easier than ever before.

## THE STANDARDS QUESTION

The second question revolves around standards. Of course, standards for the core IP infrastructure are well established in the form of Ethernet—a robust, flexible technology used the world over. It is standards for transporting live IP video that are evolving. Different groups are proposing different options.

The critical thing here for broadcasters and video pros is to ensure that the standards they adopt interoperate with each other and do not tie them to specific manufacturers or mandate a wholesale technology refresh.

So, for example, NewTek's Network Device Interface technology (NDI<sup>®</sup>) is an openly available, free to use standard with a license-free SDK. Importantly, through our Connect Pro offering, NDI also allows you to bridge



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to other emerging standards such as ASPEN and SMPTE 2022. Importantly, unlike many “open” systems, at NewTek we’re taking direct responsibility for ensuring interoperability between devices. Ultimately, this means you can work with the widest range of manufacturers and third-party systems both now and in the future. More than this, you can make more cost-effective decisions for how you bring IP into your operations.

## THE COMPRESSION QUESTION

We also often see compression cited as a concern.

To move live video over IP and use existing network infrastructure, some level of compression will always be required. However, today’s next-generation technology is perfectly capable of ensuring visual accuracy for viewers. It is certainly good enough to ensure that even live 4k video can be transported over a sufficiently capable IP network in real time.

In fact, once you see the quality IP delivers for yourself, you’re unlikely to worry about compression ever again.

## THE COST QUESTION

The final question centers around cost.

Most broadcasters and video producers have already made years of investments into traditional SDI-based systems. Quite rightly, they don’t want to abandon this investment before that equipment has delivered the maximum ROI that can be achieved. So any approach that demands a wholesale replacement of valuable existing kit is going to encounter resistance.

The good news is that with today’s hybrid-ready systems (such as our own IP Series) your existing SDI equipment can not only coexist with IP, it can deliver even greater value as a result.

Let’s look at what this means...



**THE FUTURE IS HYBRID**



# THE FUTURE IS HYBRID

Professional video and broadcast environments evolve over time. Rarely does any operation have the luxury of fitting out a complete greenfield design.

As such, many businesses contain a range of legacy equipment that is still perfectly serviceable and fit for purpose. Of course, this will typically mean that it is based around an essentially SDI-focused infrastructure.

So any operation making the move to IP is likely to want to do it stages. They need to get used to new ways of working. They need to get their people up to speed with the opportunities IP offers. And they need to release investment to pay for these new capabilities.

## **NOT SDI OR IP, SDI AND IP**

Fortunately, with IP solutions such as the NewTek IP Series, you can easily move to a hybrid environment.

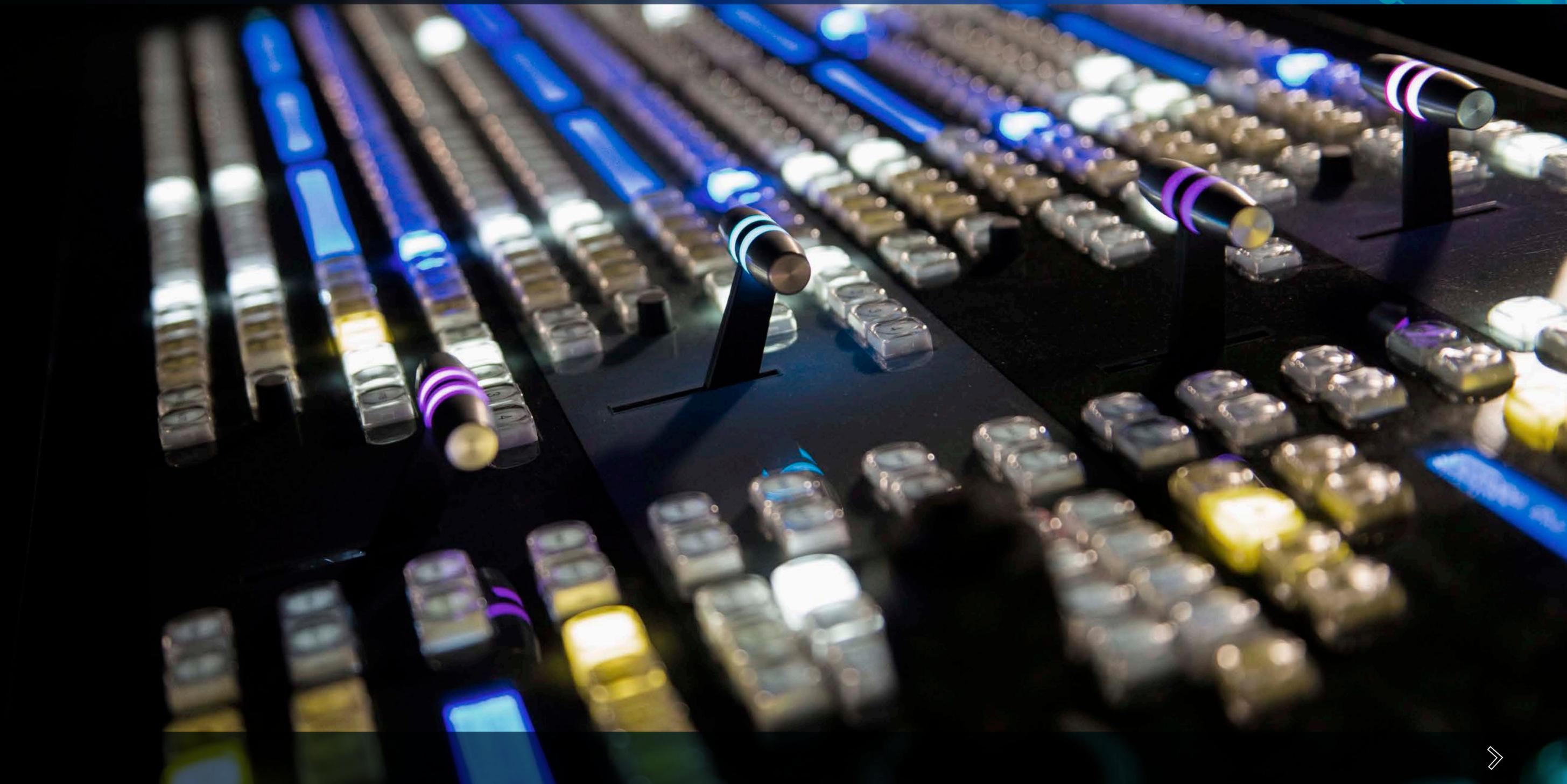
These systems feature both SDI and IP connectivity. It means that not only can you continue to use your existing SDI equipment, you can now make it available right across your IP network. So you get all the core benefits of IP without the need to abandon your current investment.

Then, as you move to a more IP-centric environment, you can replace your SDI kit when it makes sense for your operations (and when it fits within your budget cycle).

It's the best of both worlds.



**READY FOR THE (R)EVOLUTION?**



# READY FOR THE (R)EVOLUTION?

IP-based live multi-camera video is no longer a question of if and when, it is a compelling reality for broadcasters and video pros right now.

IP delivers powerful new capabilities that remove restrictive limitations, lower costs, accelerate deployment times, and enable valuable new workflows.

Better still, these are capabilities that forward-thinking businesses can begin to take advantage of right now. Using current SDI equipment with a hybrid-ready IP solution such as NewTek IP Series, you can quickly begin to realize the real-world benefits IP offers. And you can do it without wasting your existing investment.

What's more, this lays the foundations for you to fully embrace the live multi-camera IP future.

Learn how you can evolve your operations. Contact us at [tellmemore@newtek.com](mailto:tellmemore@newtek.com) to find out.



# ABOUT NEWTEK

NewTek is transforming the way people create network-style television content and share it with the world. From sporting events, web-based talk shows, live entertainment, classrooms and corporate communications—to virtually any venue where people want to capture and publish live video, we give our customers the power to grow their audiences, brands, and businesses, faster than ever before.

Learn more at [www.newtek.com](http://www.newtek.com)