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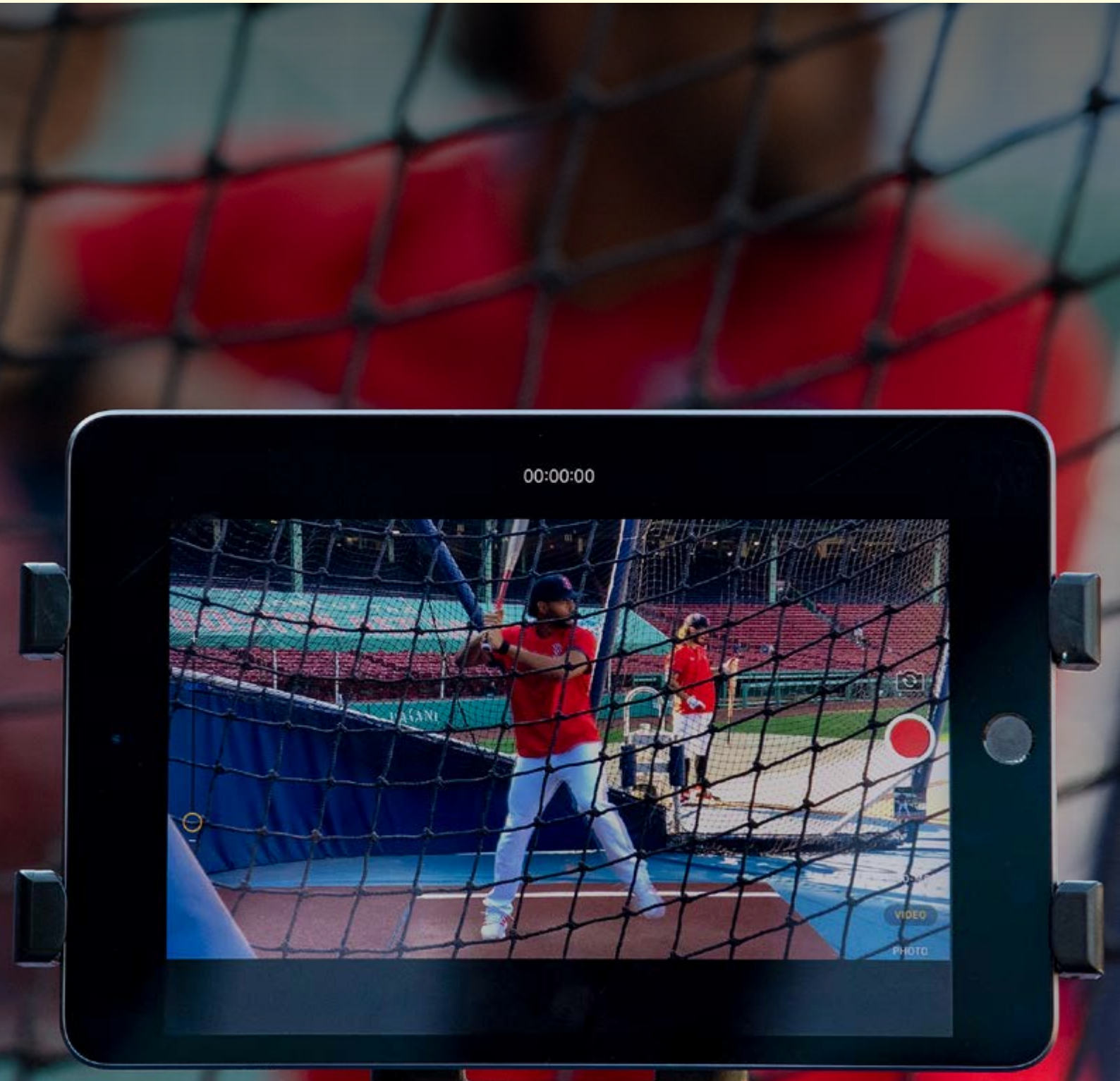
Remote revolution:
Covid-19 and the future of sports content production



Marco Lopez
SVP, Live Production
Grass Valley

Organisations of all kinds have been forced to reassess how they operate in the wake of the coronavirus pandemic. For media companies and content owners in sport, the disruption caused by Covid-19 has meant going about their business remotely.

Remote production - whereby live and non-live content from a given event is produced away from the host venue - is nothing new, but the rate at which the media industry has shifted to decentralised or 'at-home' workflows has clearly quickened following the unexpected events of early 2020.

Live productions, both on-site at an event and in a studio, have traditionally been costly, labour-intensive and resource-heavy endeavours, but remote production techniques are increasingly being employed to lighten the load. Thanks to ongoing advances in IP-based and cloud technologies, virtually every aspect of the production workflow - from the capture and production of live footage to media asset management, transcoding, video playback and graphic insertion - can now be managed remotely without the need for cumbersome equipment and hardware, large teams of production staff, and significant upfront investment.

At a time when the media industry is evolving faster than at any point in its history, and cost pressures are at an unprecedented high, remote production is enabling rights holders and broadcasters to deliver more content to more screens across more devices than ever before. Indeed, the benefits of remote production, such as increased flexibility, speed and scale, not to mention the enormous reduction in travel costs and carbon emissions, are bearing fruit throughout the entire content supply chain, and represent a step change in the industry's ability to deliver richer, more captivating viewing experiences.

Today, the technology exists for large production teams to operate from the comfort of their own homes. Editors, replay operators, camera shaders, production switcher operators and others are able to collaborate from wherever they are in the world, generating clips, highlights and longer form content seamlessly between multiple locations. Yet the industry remains in a transition phase. The rate at which yesterday's workflows are beginning to be replicated using remote production is accelerating, but more work needs to be done to ensure this shift in approach is universally adopted, and rolled out in the most effective and cost-efficient way, in the wake of Covid-19.

This report, produced by *SportsPro* in collaboration with Blackbird and Grass Valley, looks at how both traditional and cloud-based remote production are transforming the business of sports broadcasting across linear and digital channels, drawing on a selection of recent case studies to provide tangible examples of how these new workflows operate in practice.

Remote control

Sports content consumption is rapidly evolving as viewers increasingly engage in new ways. According to GlobalWebIndex, one-fifth of sports fans around the world now seek out sports content on social media, an uptick of 45 per cent over the past three years. Streaming services have also witnessed a surge in consumption, accelerated in the last few months by the global lockdown, with gaming platform Twitch said to have recorded a 60 per cent rise in viewership in March alone.

To meet this growing demand for content, sports broadcasters have been moving towards remote production workflows for some time, with many now capable of working across continents and time-zones without compromising on quality. Web-based platforms and tools for coordinating content creation are enabling teams of producers, editors and other staff to collaborate, access and edit multiple live video feeds from multiple locations. Meanwhile expensive, cumbersome hardware is fast becoming obsolete in the live production environment as more live sports content is being produced and distributed across a growing number of platforms using cloud-based production services.

Today, even the largest sporting events can be covered by a small team of camera operators and on-site technicians, meaning one production crew could potentially manage several events in a day. For media companies, the result is enhanced operational efficiencies, a marked reduction in staffing, travel, equipment and logistical costs, and an associated decrease in the environmental impact of live productions. Remote production can also help expand programming output by reducing setup costs and increasing the number and type of events covered. What's more, any cost-savings as a result can be reinvested back into content production, therefore boosting profitability.

Overcoming latency does, however, remain a fundamental challenge in a remote broadcast environment that spans multiple locations and potentially incorporates varying levels of connectivity. In any live sports production, reliable bi-directional communications between producers, on-air presenters and reporters are critical and must be maintained throughout to ensure a good quality broadcast. Remote production, with its potential for higher latencies, can easily disrupt the flow of conversations and lead to interruptions, which can be particularly frustrating for viewers.

'Remote production can help expand programming output by reducing setup costs and increasing the number and type of events covered.'

ABOVE:
Staff oversee the production of July's Inspiration Games, which was held remotely across different countries due to the Covid-19 pandemic

Five benefits of remote production

1.

Save time, money, and the planet
Remote production reduces travel costs, such as hotel and transportation expenses, minimises wear and tear on expensive, fragile equipment, and limits carbon emissions.

2.

Enhance operational efficiencies
Production teams working in a familiar, controlled environment can operate more flexibly, and potentially create higher quality content, than they can in outside broadcast trucks or a temporary installation on location.

3.

Increase output
Less travel and more streamlined workflows mean a single team can produce multiple events within the same day, increasing productivity throughout the editing process and boosting profitability.

4.

Reduce latency
Advances in IP technology have meant that central and on-site teams can communicate in real time, allowing adjustments to be made with minimal delays during a live broadcast.

5.

Reinvest in content
Money and resources saved thanks to remote production can be reinvested back into creative innovation, enabling rights holders to develop more revenue-generating content.

Production on the fly

NRL and Blackbird case study

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One company that specialises in the digital remote production space is Blackbird, which claims to have developed the world's fastest, most powerful cloud video editing and publishing platform. Founded in London back in 2002, Blackbird boasts the only professional-grade, browser-based video editor currently on the market.

With the coronavirus pandemic having forced the sports media industry to work from home, more and more content owners are turning to Blackbird to stay visible and relevant, as well as drive their brand reach, engagement and monetisation. In sport, the company's burgeoning customer base comprises the likes of IMG, Deltatre, Eleven Sports, MSG Networks and the National Football League (NFL), while its recent client wins amid the pandemic include Premier League giants Liverpool and Arsenal, the National Hockey League (NHL), Riot Games, Venn and the London-based production company Whisper.

"What we've been predominantly talking about in the last five months has really been about our remote attributes and how easily we are able to be used in a remote production environment," says Ian McDonough, who has led Blackbird as chief executive since 2017. "That's because we can be used on a very low bandwidth connection, on any laptop, and any browser."

"We're never going to go back to how it was before. There's something that's fundamentally shifted."

RIGHT: Australia's National Rugby League uses Blackbird's web-based platform to rapidly edit and publish match clips and highlights

ABOVE:
WBAL Sports anchor Pete Gilbert reports from a makeshift TV studio in his colleague's home basement

Part of Blackbird's appeal, says McDonough, is its ability to enable production staff to frame-accurately view and edit content just seconds after the action happens using a bandwidth connection as low as two Mb/s. By comparison, competitors in the professional, higher-end space, such as Adobe Premiere and Avid, often require connections of at least 20 Mb/s, as well as additional hardware.

"We are incredibly scaleable in that remote instance versus our direct competition," McDonough continues. "The company wasn't conceived around a pandemic but around a concept of freedom - freedom from location, freedom from proprietary systems, and the freedom to edit depending on your skill level.

"The name Blackbird symbolises freedom. It is one of those concepts that really goes through everything that we've done, and I think one of the key things about that freedom is around freedom from heavy resource. We don't require heavy resource, whether it's bespoke hardware, bespoke equipment, or heavy-duty bandwidth or power. We really are one of those companies that is based around the fact that we pack a powerful punch with a very light footprint."

Among Blackbird's sports clients, Australia's National Rugby League (NRL) uses the company's web-based platform to rapidly edit and publish match clips and highlights to a variety of social platforms within as little as 30 seconds. Throughout the pandemic, Blackbird's customers have also been able to access centralised archive material and create new content for digital and linear channels, thereby plugging holes in programming schedules and engaging their fanbases in the absence of live events.

"They've looked at Blackbird as a tool that can be started up on the fly, doesn't need to have heavy duty capex investment; it's a cloud-based, state of the art solution that can be subscribed to over a period of time," says McDonough. "I think in that respect, [Blackbird's tool] absolutely fits any budget, whether you're a federation for a smaller sport or you're a Premier League club. We're there to offer a premium service on a reasonably priced subscription basis designed to suit a wide range of budgets."

67.3% of media companies are investing more in virtualisation technologies

Source: IABM Media Technology Impact Index 2020

Forced innovation

While remote production techniques have been in deployment for some time, the push to reduce costs and streamline workflows has taken on added significance in the wake of the coronavirus pandemic. As live events gradually resume, it is already becoming clear that the disruption will have long-term consequences for the content supply chain.

A recent report by the IABM into the impact of the coronavirus found that the pandemic 'is leading to an irreversible shift in media technology investment' as companies move away from legacy models towards digital business workflows. With many prioritising technologies that enable remote working and content production, companies reported a 67.3 per cent rise in investment in virtualisation technologies and a 59.8 per cent uptick in spending on remote production specifically. Content production is also moving more quickly to the cloud, the report said, particularly for those virtual tools that enable remote collaboration and editing.

These trends are perhaps unsurprising. In April, sports marketing agency Two Circles estimated that the sports industry stands to lose as much as US$61.6 billion in revenue this year alone. With belts being tightened across the board and many businesses seeking to do more with less - and using technology to make that happen - remote production presents an opportunity to reduce and even eliminate previously unavoidable expenditures, thereby offsetting some of the financial losses that are projected as a result of the pandemic-enforced shutdown and a looming economic recession.

For governing bodies and rights-holding broadcasters, remote or at-home production offers a practical way to overcome newfound logistical challenges, such as unforeseen scheduling clashes, cross-border travel restrictions, stricter health and safety protocols, and social distancing. It is little wonder, then, that after the widespread suspension of live events in March, many sports rights holders and broadcasters responded by adapting their production processes to navigate these unfavourable conditions.

ABOVE:
UK broadcaster BT Sport is aiming to go fully remote by 2023

59.8% of media companies say spending on remote production is rising in the wake of Covid-19

Source: IABM Media Technology Impact Index 2020

ABOVE:
Blackbird's online platform can function on a bandwidth connection as low as two Mb/s

In the UK, for example, pay-TV broadcaster BT Sport moved quickly to relocate its entire production operation away from its studios at London's Queen Elizabeth Olympic Park. Within the space of just three weeks, the network had established a decentralised remote operation that would enable its family of channels to stay live on-air with all but a handful of staff members working from home, and it was even able to roll out eight new live shows using a virtual studio setup developed by its in-house engineering team.

In the US, meanwhile, pay-TV giant ESPN deployed a fully at-home workflow for one of its studio shows for the first time in April, when the entire crew working on its basketball show 'The Jump' performed their roles while based at their respective homes. The network has since deployed similar setups for its live Major League Baseball (MLB) and National Basketball Association (NBA) coverage.

In line with government-imposed restrictions on the staging of large gatherings, most major rights holders have made similar adjustments as part of their return-to-play plans. Formula One, for instance, dramatically downsized its on-site activities, including its broadcast operation, for its truncated 2020 race schedule, slashing the number of broadcast personnel at each of its Grands Prix from over 250 to just 60. Meanwhile Formula One Management (FOM), the series' host broadcaster, brought forward a remote production model it had been planning to introduce in 2022.

Rather than producing and distributing a world feed at the track itself, FOM sent individual camera feeds directly back to its UK headquarters, where a team of producers packaged and distributed race footage to broadcast partners, many of whom had elected to conduct their own programming operations remotely. In the UK, for example, Sky Sports chose to base all but its presentation team at its studios in West London, while Whisper, which produces Channel 4's Formula One highlights coverage and uses Blackbird to edit interviews and behind the scenes content, has said it plans to manage its productions remotely for the foreseeable future.

While forced by unforeseen circumstances, such a shift in approach could well prove, as IABM's analysis suggests, irreversible. Indeed, the experience of dealing with the fallout from Covid-19 has led many organisations to accelerate their efforts to build entirely new production models for the future, fuelling the belief that the media industry is unlikely ever to return to the 'old', pre-pandemic ways of producing content.

As McDonough calmly states: "We're never going to go back to how it was before. There's something that's fundamentally shifted."

He adds: "For many years, people have been saying the office is an overpriced luxury within company budgets and not really required. I'm not too sure it's exactly that but it needed a cultural shock to shift that thinking - and I think that's probably happened. There's a genie that's been let out of the bottle that's going to be very difficult to get back in around flexible working and work-life balance.

"I think we can see the benefits for companies, the benefits for employees, the benefits for travel, resource, sustainability. There are probably some significant long-term benefits that are going to result from this."

The impact of 5G

Remote production over mobile networks could have a marked impact on how live sport is broadcast at a range of events and venues, particularly smaller facilities without fibre networks already installed.

Back in November 2018, UK pay-TV broadcaster BT Sport and EE teamed up to deliver the world's first live sporting event using a 5G network, and the pair have since completed further 5G-enabled remote production trials at British soccer venues. In the US, meanwhile, NBC Sports successfully trialled the use of 5G during live National Football League (NFL) broadcasts in December, as part of a tie-up with Verizon and Sony.

With early trials still ongoing, it is not yet clear at which point in the broadcast chain 5G will provide the most value. Nevertheless, as the cost of connectivity continues to fall and bandwidths increase, and provided certain barriers can be overcome, such as ensuring network performance, reliability and security, a wholesale transition to 5G is anticipated in the coming years.

In July, a survey found that 82 per cent of broadcasters believe 5G and next-generation cellular networks will eventually replace traditional satellite and digital TV (DTV) broadcast distribution methods. The research, carried out by Norwegian media production specialist Nevion, also found that almost all of the broadcasters surveyed (94 per cent) agreed that the use of 5G will increase the consumption of content.

"5G technology can potentially deliver OTT broadcast services with the quality required not only for mobile devices, but also for TV screens at home," explained Andy Rayner, Nevion's chief technologist. "This could mean, as our research uncovered, that 5G is eventually likely to usurp DTT [direct terrestrial television] for consumers at home as well as on the move.

"In the long term, it is likely that 5G mobile technology could become the standard means to deliver terrestrial television. However, it is expected that both DTT and 5G delivery – when ready – will co-exist for a reasonable time."

On the production side in particular, the implications of 5G could be profound. The added mobility of untethered cameras, for example, promises further depth of coverage without increasing cost or complexity. The 5G signal has been transmitted in trials via a large receiver but once consumer networks are available, it will be possible to do so using the kind of mobile 'dongles' familiar to commuters and business travellers everywhere.

"Whether [the arrival of 5G is] imminent or not, it doesn't really matter," says John Honeycutt, a media technology veteran who joined Blackbird as a non-executive director in June. "One thing this industry has always strived for is efficiency of encoding and codec, and then accessibility of appropriate bandwidth to distribute said content, or said data.

"We've used bonded cellular in the industry for many years from a news gathering perspective, and if a 5G connection is available, the industry will use it. If it's 6G, 7G, whatever it is, the industry will consume it, will attempt to, in positive ways, channelise it and slice it up and do things with it that perhaps the original standards weren't thought for, which is great - that's innovation. I think [5G] will come regardless of whether it's next year or three years from now, it will be used."

ABOVE:
Blackbird's John Honeycutt and Ian McDonough

Remote production and the Olympics

OBS Cloud's Olympic revolution
CLICK HERE TO FIND OUT MORE

Major sports events have served as important testing grounds for live remote production for many years. UK public-service broadcaster the BBC, for example, has implemented remote production for its Olympic Games coverage since Vancouver 2010, while commercial free-to-air network ITV first went remote for soccer's 2014 Fifa World Cup in Brazil.

While remote production is increasingly becoming the norm at lower-tier events, it is at these types of marquee occasions that the techniques and technologies that underpin it come into their own.

In 2018, Olympic Broadcasting Services (OBS) and Alibaba Cloud, the cloud computing arm of Alibaba Group, teamed up to demonstrate the scalability of cloud-based live broadcasting in the most demanding of major event environments. The partnership saw the launch of OBS Cloud, a new solution that would enable rights-holding broadcasters to cover the world's largest and most complex sporting event more efficiently, effectively and securely than ever before.

Traditionally, Olympic broadcasters have been required to book space at an International Broadcast Centre (IBC) in the host city that was specially built to serve the needs of many different TV networks. They would then build bespoke studios and temporarily deploy remote broadcast infrastructure, such as outside broadcast units and editing suites, all of which required network connectivity at a massive scale and an expensive physical presence on-site. After a period of testing, everything would then be put into production for the duration of the Games, before being dismantled and shipped home.

Thanks to the launch of OBS Cloud, however, broadcasters will soon be able to access most of the visual and audio assets related to the Games from anywhere in the world, as well as setting up their own content creation, management and distribution systems within the platform. From Tokyo 2020 onwards, networks will have the flexibility to move their deployment home or keep their assets within the OBS Cloud for future Olympic events.

This ongoing evolution in Olympic broadcasting has already spawned significant changes to the way major networks operate. In Europe, for instance, Discovery-owned broadcaster Eurosport has built three permanent content hubs - in Paris, Amsterdam and London - to take advantage of its newfound ability to function remotely ahead of Tokyo 2020. Austrian public service broadcaster ORF also intends to conduct a scale-down remote operation for its coverage of next year's Games as part of a €75 million cost cutting plan in the wake of the Covid-19 pandemic.

"The great result of Covid for us was that it allowed us to start thinking outside of the box about programming ideas that were interesting to our viewers...and how we get our viewers better accustomed to the type of viewing experience we're going to expect moving forward, including during the Games," says Eurosport president Andrew Georgiou.

"It will also help our own producers and commentary teams to the extent that they can start using it in the normal course of the business. Quite frankly, some of our own teams are going to have to get used to doing things differently and this Covid situation has given them some pretty good practice for some of the challenges they are going to be facing.

"For example, how are you going to show intimacy or familiarity with an athlete when they are not in the same location as you? How do you do that virtually or through virtual reality and do it well? These are all challenges that we are going to re-train and re-educate ourselves around and we are going to use this year to make sure that, by the time we hit the Olympics, we're going to be as good as we can be."

MAIN:
A cameraman captures the conclusion of a boxing bout at the Rio 2016 Olympic Games

“When you start looking at the longer term possibilities around sustainability, around inclusion, around creativity - it’s a game changer.”

SportsPro
BT Sport case study
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IN FOCUS:

BT Sport brings back the Bundesliga

The return of the Bundesliga in May meant that pay-TV network BT Sport was the first UK broadcaster to get back to showing live top-flight European soccer. But even as some semblance of normality was returning in Germany, the UK still remained comparatively entrenched in lockdown, which meant BT Sport was forced to rethink how it normally goes about its business.

Members of BT Sport’s production team are typically holed up at the company’s studios in Stratford in East London, but nearly all of them were at home for the broadcaster’s coverage of Borussia Dortmund’s 4-0 win over Schalke on 16th May, a time when the UK government’s stay-at-home guidelines had been in place for nearly two months.

Host James Richardson and journalist Raphael Honigstein were sat at a social distance as they presented the game from a studio, with former England soccer player Owen Hargreaves offering punditry via a video stream. Paul Dempsey, who was memorably interrupted part-way through the broadcast by the arrival of his Tesco food shopping delivery, led the commentary of the game from his loft in Dublin, with Steve McManaman co-commentating at his home in Manchester.

Speaking to *SportsPro* shortly after the production, Jamie Hindhaugh, BT Sport’s chief operating officer, said: “We’re not a news broadcaster, we’re a sports broadcaster, so we should be working very hard to create output with empathy, reflecting how our audience’s situation is at the time.”

He added: “We wanted it to look and feel like BT Sport but we wanted to be very clear that we are treating our own team’s safety as a key priority and using innovation to give our audiences what they want.”

BT Sport’s coverage of the Dortmund game was one of five live fixtures being shown concurrently by the broadcaster that day. That workload immediately stress-tested the company’s remote production capabilities. In total, less than ten people were on site to handle the coverage, down from the “50 to 70” Hindhaugh said would usually be required to execute an operation of that scale. All of that meant moving much of the necessary equipment for a live broadcast into people’s homes and relying on 4G connectivity and home broadband connections.

The reward was more than five million viewers across BT Sport’s Bundesliga coverage of the returning round of fixtures, significantly growing its pre-lockdown audience for the German soccer league.

“When you start looking at the longer term possibilities around sustainability, around inclusion, around creativity - it’s a game changer,” Hindhaugh said. “I’m proud that we had the support for what was a massive weekend for us being the only place with live football.”

Since the onset of the pandemic, BT Sport has enabled its staff to do virtually everything without having to be physically present at events, whether it be editing content, searching for footage in the archive, commentary, presenting, or publishing on the network’s digital channels. The broadcaster was also able to apply what it learned from its Bundesliga coverage – and that of English soccer’s Premier League, the return of which followed in June – to help bring back live boxing in the UK in partnership with Frank Warren’s Queensbury Promotions.

The success of those broadcasts has only served to accelerate BT Sport’s goal of going fully remote by 2023, a goal which Hindhaugh believes has more than just commercial benefits.

“We had already gone public [in September 2019] with the strategy to try and take a lot of our production workflows remote,” he said. “What that meant at the time was remote as in centralising your back end operation, so reducing the amount that people had to travel and what we thought meant being able to do it all from Stratford.

“If you want this to be the long term then people have got to enjoy what they’re doing and see it as a benefit. Otherwise - and I don’t want this - whenever we get back to whatever normal is, people just revert to type. [There is] too much opportunity in this to change how we impact our planet, for want of a better way of putting it.”

ABOVE:
In May, Germany's Bundesliga became the first of Europe's major soccer leagues to return to play

“If you look at how small our footprint was, we had 28 people on site. I think it was a huge success from an innovation perspective.”

SportsPro
PGA Tour case study
CLICK HERE TO FIND OUT MORE

Credit: PGA Tour

IN FOCUS:

How the PGA Tour returned to full swing

As Rory McIlroy and Dustin Johnson faced off against Rickie Fowler and Matthew Wolff in the TaylorMade Driving Relief in Juno Beach, Florida, the team at PGA Tour Entertainment were 250 miles up route I-95 handling the production from its facility in St Augustine.

The charity skins event, which took place on 17th May, was filmed using just six handheld cameras, a drone camera, and a camera in a plane that followed the players around Seminole Golf Club. The massively scaled-back production meant that less than 50 people were required on site, as each camera had a bonded cellular transmitter to provide images from the course to PGA Tour Entertainment’s headquarters, with the live broadcast going out across NBC, Golf Channel and NBCSN, as well as the NBC Sports and PGA Tour Live streaming platforms.

“We’re used to doing at-home production so we already had that under our belt,” Greg Hopfe, PGA Tour Entertainment’s vice president and executive producer, told *SportsPro* in June. “Last fall we started using bonded cellular cameras for PGA Tour Live at some events, so when the TaylorMade match came to be, it was really helpful and an opportunity for us to advance that technology.

“If you look behind the scenes at how small our footprint was, we had 28 people on site and 23 people back at PGA Tour Entertainment. I think it was a huge success from an innovation perspective – it’s the first time that I can recall ever seeing a bonded cellular event on network broadcast television.”

The opportunity for PGA Tour Entertainment to fine-tune its remote workflows proved vital ahead of the tour’s return to full swing at June’s Charles Schwab Challenge in Texas. With fewer people allowed on site due to coronavirus-enforced health and safety protocols, figuring out how to do things remotely proved to be “a huge exercise”, said Hopfe, who noted that particular consideration was given to “safely getting crews on site” and “into our own building”, as well as working out what precautions were required in production trucks and control rooms.

“We have been working with Live Mobile Group (LMG), our truck vendor, as to how to space people out in our truck and reconfigure it so everyone has proper spacing,” Hopfe said at the time. “Then, in our own building, we’re looking at ways to space people out as well - not only just in one control room, but also utilising some of our other rooms and putting up glass partitions to promote proper spacing.

“For the production side, it’s continuing to use the technologies that we’ve expanded on. I think, for us, the work environment is so different than what we’re used to with the spacing and TV trucks and moving some people back home, that just doing production in a different way, an innovative way, will be a concentration, and then we still have four weeks where there aren’t fans, so we’re going to learn from week one to week two, we might be doing something different.”

Golf’s return at Fort Worth also created challenges for the PGA Tour’s domestic broadcast partners, CBS and NBC’s Golf Channel, who committed to having ‘fewer than half’ of their normal contingent for a PGA Tour event at the Charles Schwab Challenge, despite using roughly the same amount of equipment. The team on site was supported by personnel in Orlando, Los Angeles, New York and Stamford, Connecticut, who were carrying out many of the production elements, including scoring graphics, remote editing, video shading, replays, and editorial support.

All told, a total of 59 hours of live golf was delivered to fans via 23 cameras, including ten hard cameras and six mini RF cameras, as well as robotic cameras and live drone coverage.

“This is the most complicated production I have ever been involved with, including Super Bowls and [NCAA] Final Fours,” Sean McManus, chairman of CBS Sports, told reporters during a conference call ahead of the tournament.

“When we started two months ago first and foremost was a production that is safe for everyone on site with fewer people and social distancing. Then it became about how can we produce the coverage with things like graphics and shading in another location.

“It’s incredibly complicated and then you put the layer on top of that with screening, testing, and quarantining for the safety of employees. We’ve dealt with things we never have before.”

ABOVE:
The days of crowded OB trucks at PGA Tour events could be coming to an end

“We know now that we can do it in a remote way that works. This will forever change how we do the Draft in years to come.”

SportsPro
NFL Draft case study
CLICK HERE TO FIND OUT MORE

IN FOCUS:

Delivering the NFL Draft remotely

The National Football League (NFL) Draft is typically a glamorous affair and a major media event in its own right, but this year’s edition saw college prospects learn their professional fate from the comfort of their own living rooms as a result of the lockdown measures in place due to Covid-19.

When the NFL announced in early April that this year’s edition would no longer be able to go ahead as planned in Las Vegas, just two weeks stood until the event was scheduled to take place, which meant the league had to move quickly to produce a Draft unlike any since the first edition was held in 1936.

Faced with a withering supply chain, the NFL soon tapped commercial partner Verizon Communications to source enough iPhone 11s for more than 100 video production kits, which were promptly distributed to 58 prospects, all 32 head coaches, 32 general managers, eight owners and six college coaches. As well as the phones, each kit comprised an external boom microphone and tripod, noise-cancelling headphones and lighting equipment.

“Ideally what we would send to the clubs would be professional cameras, to the prospect’s homes we’d send film crews out,” said John Cave, vice president of information technology and football solutions at the NFL, speaking during a *SportsPro* Insider Series session in June. “We didn’t have that luxury in this environment because you can’t put a film crew together, you can’t send a film crew into somebody’s house, so we thought of how can we put together a kit that we send out to everybody?”

Meanwhile, Roger Goodell announced the picks from his basement, where a single broadcast camera was used to cover the NFL commissioner’s announcements, while a second interview camera was in place for him to talk to the successful prospects. There was a small crew at Goodell’s home, which consisted of a single camera operator in the same room, an audio operator in a separate room, an operator in a satellite uplink truck, one IT person, and a small number of key NFL personnel.

“Not only were all the clubs at home and our prospects at home, all of our staff was at home,” Cave added. “We normally have 100 to 200 people that go to draft to manage the whole thing - we were all operating in our individual homes, so we were going through the same challenges everybody else was, including internet bandwidth, power. We reached out to all of our critical folks, as well as all 32 clubs, and made sure that everybody had really robust solutions for internet connectivity and power.”

While the Draft is always a source of entertainment for fans, it is serious business for NFL teams, whose key decision-makers are usually filmed in ‘war rooms’ as they select their picks. Given that was not physically possible this time round, team executives had to find a way to make their calls remotely, creating added pressure as they raced against the clock.

In order to help with that process, technology giant and NFL partner Microsoft created 32 separate private Teams channels within the league’s organisation. Each club was then able to communicate within their own ranks and with the league via their own private channel, all without being able to see what other franchises were up to. Franchises were given access to a form, where they could fill out their pick’s name, college and other information. Once authenticated by the NFL, the selection was relayed to Goodell’s Microsoft Surface tablet, ready to be announced live on-air.

“On their minds, the last thing that they cared about was a camera being in their homes,” Cave said of the virtual war rooms. “This is a really important event to them, it’s a business meeting. They’ve got to select their players, so all 32 teams had to figure out a way how they’re going to engage with each other, use different communication platforms to communicate with each other as if they’re in their Draft room.”

While it might not have been the Draft the NFL had envisaged at the start of 2020, coverage of the three-day event – which ultimately featured camera feeds from more than 600 homes - still attracted a record total of 55 million viewers in the US, an increase of 16 per cent on 2019.

“There are a bunch of things I can see us carry forward that came out of this year,” Peter O’Reilly, the NFL’s executive vice president of club business and league events, told *Forbes*. “One is certainly the access to the prospects’ homes. We know now that we can do it in a remote way that works. This will forever change how we do the Draft in years to come.”

ABOVE: NFL commissioner Roger Goodell announced this year's Draft picks from his home basement

ABOVE:
Grass Valley cameras are used to capture ESPN's baseball coverage

Pastures new

Accelerating advances in technology are changing the game for sports broadcasters. Montreal-based Grass Valley has been at the forefront of broadcasting innovation for more than six decades, but the company remains focused on creating the production tools of the future.

"It's pretty clear that these remote capabilities are not going to go away."

RIGHT:
German OB company TV Skyline counts on Grass Valley's production switchers

Across all industries, collaboration between geographically dispersed locations has fast become the norm. Government-imposed travel restrictions and social distancing measures resulting from the coronavirus pandemic have precipitated a necessary and rapid shift towards remote working, increasing the demand for companies that enable teams to connect and cooperate over long distances.

When it comes to live sports production, few companies have a longer track record in enabling remote collaboration than Grass Valley. Headquartered in Montreal, the company has been in the broadcast business for over 60 years, during which time it has led the way in developing a range of solutions and technologies that facilitate flexible workflows and allow creative teams to be based in any location.

In the wake of the Covid-19 outbreak, Grass Valley is now helping live content creators across sports, news and entertainment to manage their operations and media resources seamlessly, cost-efficiently and, of course, safely.

"In our conversations with the large media companies, it's pretty clear that Covid has shown them that there is an opportunity for more remote operations, and even, for that matter, work from home," says Marco Lopez, Grass Valley's senior vice president of live production.

"That's becoming a very common topic among the major media companies. They are now looking and strategising as to how they can reduce significantly - these are double-digit reductions - the staff levels that would no longer be coming into the typical office. For that purpose alone, it's pretty clear that these remote capabilities are not going to go away."

In the aftermath of the pandemic, the benefits of being able to deploy only cameras and a small number of staff on location are manifold. Remote production means the majority of the production team no longer need to risk travelling to the event venue, thereby limiting the number of operatives working in quarantined areas, while the most suitable creative and on-screen talent can be sourced from wherever they are in the world.

"Let's just remember that like there are restrictions of being at the event itself, there are also restrictions on coming into one building to produce content," adds Lopez. "So what our customers are looking at is maybe these operators could be working from home or distributed across several offices, just so they can keep other legislative requirements in check when it comes to the number of people who are typically required, especially for these very large productions, like a weekend football match."

Grass Valley's remote production tools offer broadcasters and content owners greater freedom to cover even the largest live events irrespective of their location. The company's advanced DirectIP technology, for example, enables base stations to be located up to 20,000km from the onsite camera,

and has been proven in the most demanding of sporting environments.

At the 2019 FIS Alpine World Ski Championships in Åre, Sweden, for example, DirectIP was applied in a traditional remote production by Swedish public broadcaster Sveriges Television (SVT) and media solutions provider Net Insight. Five years in the making, the project incorporated no fewer than 80 Grass Valley-supplied cameras located along the ski course, each of which delivered uncompressed HD signals over two 100 Gbps fibre circuits to XCU camera base stations at SVT's production facility over 600km away in Stockholm. All told, a team of around 150 camera operators and technicians worked on location in the snowy hills of Åre, with the rest of the production staff and workflow based in the Swedish capital.

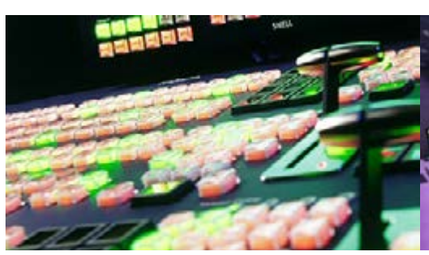
By simplifying the required interconnections between field cameras and the XCU, Grass Valley enabled shaders to match the feeds without any delay. Meanwhile SVT was able to avoid any compromise in its ability to deliver high quality, synchronised images to rights holders, and in turn to provide a rich and immersive viewing experience for fans at home. According to Net Insight, the collaboration gave rise to two standout achievements: overall setup time was cut from around four weeks to 24 hours, and production costs were reduced by as much as ten per cent.

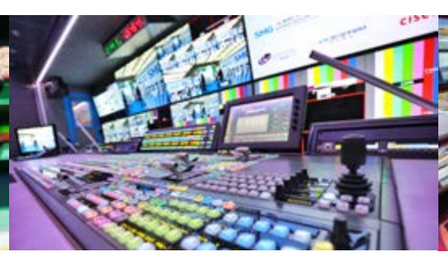
Those reductions demonstrate how remote production can lead to efficiencies in a major event environment. For the production of lower-tier events that require smaller setups, it may still be cheaper to send an OB truck and a small team of camera operators than to acquire connectivity that is fully backed-up. Still, as Lopez notes, there are more benefits to remote production than simply cutting costs.

"There are great advantages of doing remote production outside of the cost aspect," he says. "What I hear often from customers who have been doing this for a long time, for example NBC Sports when it comes to the Olympics, is that for their staff, being in one location, with one set of creative staff, one creative culture, allows you to create much more efficiently.

"Also, the consistency of that creative look is maintained. When you're doing an Olympics, where it might be in Australia or Tokyo, undoubtedly you'll be hiring lots of people in that region and so you need to train them up, make sure that they align with the creative talent of your other members. So there are lots of advantages, not to mention things like [avoiding] jet lag and people not being able to go back to their families for long periods of time."

LEFT:
Grass Valley helped reduce production costs for the 2019 FIS Alpine World Ski Championships





BELOW:
Grass Valley production solutions are at home in any studio or mobile environment

Ahead in the cloud

While traditional remote production - whereby most technical staff work out of a central broadcast facility - has been in use for some time, the Covid-19 pandemic and the need for people to work from home has given rise to the next evolution in remote production. Now, media companies are shifting towards distributed workflows, which has in turn accelerated the industry-wide move towards the cloud and its myriad benefits.

In April of this year, at its GV LIVE Presents - Innovate 2020 event, Grass Valley announced video game developer Activision Blizzard as a launch customer of its Agile Media Processing Platform (GV AMPP), a new cloud-native system which enables production teams to create custom, virtual master control rooms that are accessible from anywhere in the world. The power of the platform is such that multiple distribution streams, each with separate graphics and languages for different audience regions, can be produced by a single operator, all from one web-based interface.

"One of the challenges that was there before was ethernet and LAN and WAN type of environments did offer the possibility of doing remote production," explains Lopez, "but it was always very complex to set up a VPN connection, and even these VPNs sometimes disconnect, security is always a little touchy and difficult.

"The cloud providers, whether it's Amazon, Azure, Google or others, have been obviously refining and spending billions of dollars on things like connectivity and security, and so it really

ABOVE:
Remote production consolidates equipment in a central production hub: with minimal kit and fewer operators sent to the event site, IP technology is used to connect cameras to the hub over telecom networks or the internet, enabling production teams to manage multiple events more efficiently

just makes a lot more sense to take advantage of what's happening in the IT world, maybe more for the consumer space, but now bringing it to our industry.

"What used to be limitations due to the physical barriers, where the operator or talent needed to be next to the equipment, those are now no longer barriers which are holding us back because, with the cloud opportunity, we can easily get connectivity. Operators, talent, decision-makers like directors and producers, as well as audio directors, graphics operators and replay operators, can have immediate access to all of the images that they need so they can make those real-time event decisions to produce shows at the same quality that they used to produce when everyone was at the event. And more importantly, all of them can do their job from the comfort and safety of their homes. All they need is a web browser with internet access - and maybe even more exciting is that this distributed model can scale almost infinitely."

As the core technology powering the newly created GV Media Universe, Grass Valley's comprehensive ecosystem of cloud-based tools and third-party services, GV AMPP allows production teams to create customisable workflows, with a variety of apps such as multi-viewers, router panels, test signal generators, switchers, graphics renderers, clip players and recorders — all of which can be deployed at a moment's notice.

"Maybe even more exciting is that this distributed model can scale almost infinitely."

Blizzard first began using GV AMPP to deliver professional esports tournaments for its Overwatch League (OWL) and Call of Duty League (CDL) in early February, and since the end of March it has done so in a completely remote fashion, with all operators and talent working from their homes.

As well as being a fully elastic software-as-a-service (SaaS), another benefit of GV AMPP is that it is built upon a microservices architecture, which separates processes within a broader workflow into smaller, more autonomous functions. The beauty of this approach is that it adds greater degrees of flexibility to existing IT infrastructure, alleviating many of the issues that complicate common IP and cloud deployments.

In turn, operators are able to build and maintain services, scale applications and capacity up or down as required, and therefore only pay for the infrastructure in use. And because microservices are small and self-contained in nature, they are much easier to maintain for technology suppliers like Grass Valley, which ultimately makes them simpler to support as the rollout of bug fixes and new versions can be drastically accelerated.

Needless to say, the benefits of speed and flexibility afforded by microservices are especially useful in a live production environment, particularly live sports. For broadcasters, the ability to quickly and cost effectively spin up subscription services, pay-per-view events or seasonal packages is hugely valuable, creating greater scope to drive incremental revenue.

"I would say probably the biggest evolution is the full adoption of the cloud," says Lopez. "What I mean by that is not just using the cloud for control, but using the cloud for what we like to call the data plane, which is the element of the cloud where we run all of the customer applications and where all the data - video, audio, etc - gets processed.

"Today, in several industries, whether it's accounting, finance, travel, all of these platforms have now moved completely into the cloud. All the compute, all the storage is now a cloud offer. Where I think, for our industry, the evolution will continue is rather than having dedicated hardware at these events or in central locations, we can see that customers will take further advantage of the cloud where they can start bringing that compute and storage capability into the cloud.

"Today, they're starting small with maybe lower production value events, they're doing archive in the cloud, because that's more cost-effective. But I do think that fully utilising the benefits of the cloud and how that will transform our industry is probably the first and biggest evolution that I can see, even before things like connectivity."

ABOVE:
Blizzard Entertainment uses Grass Valley's cloud-based AMPP service for its Overwatch League productions

RIGHT:
Blizzard's GV AMPP-powered master control

Making the connection: Conveying emotion in the absence of fans

Sports broadcasts rely on crowd shots to convey the passion and excitement that follows the on-field action, but with competitions gradually returning behind closed doors, the job of transmitting the raw emotion and atmosphere of a live event has grown much more difficult.

Whether operating in a remote or on-site environment, image capture naturally plays a central role in the content creation process. In order to augment the quality of the content and offset any risk of its lower value - perceived or otherwise - due to the absence of fans, producers need to find new ways of drawing the viewer in.

Here, Chris Merrill, director of product marketing at Grass Valley, suggests six ways production crews can tell the story and create an all-important sense of intimacy.

Put cameras in new positions
Move cameras closer to the field. Positioning cameras lower down in what were once spectator areas affords new vantage points for the TV audience, and also has the added advantage of capturing fewer empty seats within the shot.

Get into the scoring area
Depending on the sport, these might be low or high positions with views that can't be obtained any other way. Capturing players expressions during those scoring moments are strong emotional points of any sporting event.

Deploy untethered handheld cameras
Put at least one handheld on the sidelines to help audiences feel like they are in the thick of the action. Using wireless technology will free up the camera operator to provide up-close and personal insights.

Use the right lenses
Depth of field is important. With fewer camera operators, you'll need B4 lenses to provide the range and zoom required to capture as much action as possible. Don't miss a shot due to focus or zoom issues.

Add detail with high resolution
As humans, we rely on faces to convey emotion. We rely on them so much that we even talk of micro expressions - the little tells that convey what follows next. For capturing all of the nuance of expression, you can't beat UHD.

Provide insight with high speed
Sports action passes quickly. The ability to slow down these critical moments not only provides fans a much closer look at what happened, it also provides the content needed for additional commentary to build appreciation and insight into the sport and the players. Pairing high-resolution detail with the ability to capture at high speed, for a crisp slow-motion replay, makes storytelling much more impactful.

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For more information about future reports, please contact:

Charlie Barker
Head of Partnerships
cbarker@sportspromedia.com

Michael Long
Editorial Director
mlong@sportspromedia.com

@SportsPro
sportspromedia.com

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