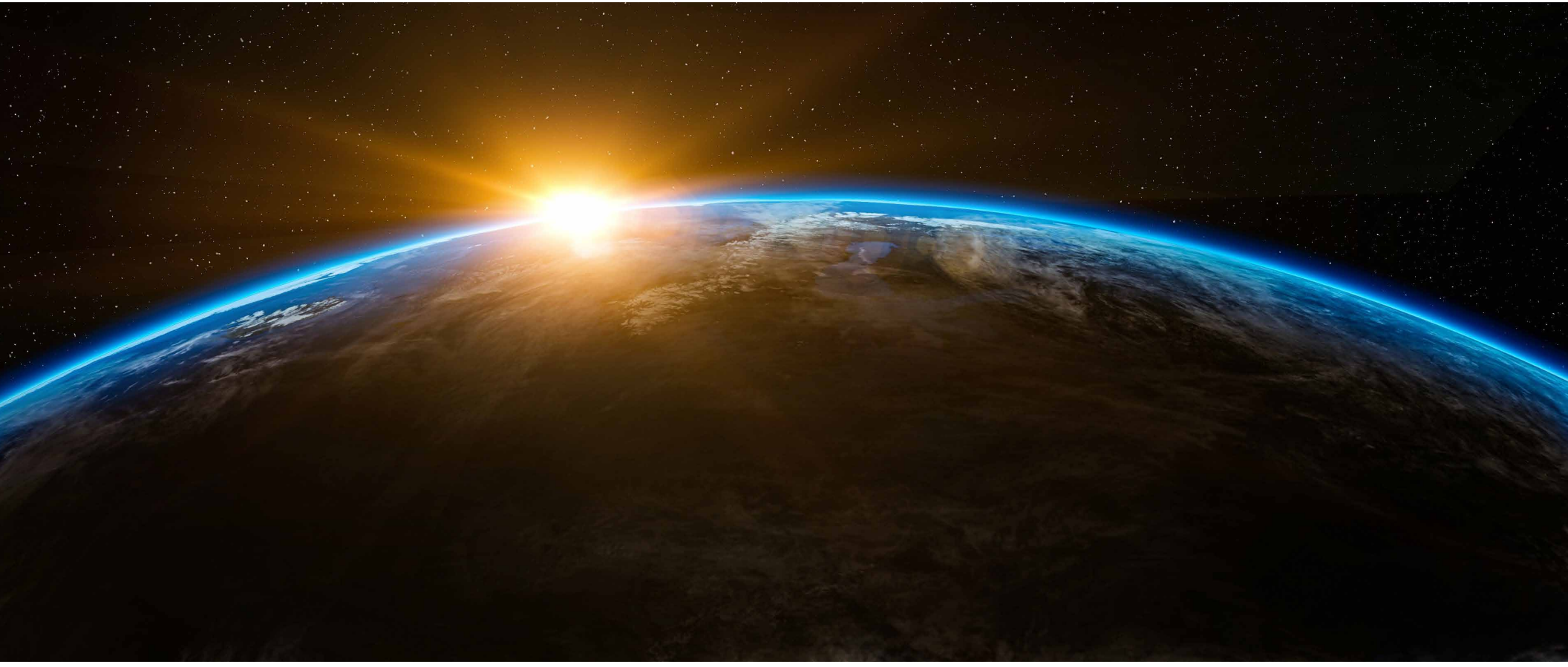
C-Band Spectrum Reallocation From Satellite to 5G Offers a Great Opportunity for MVPDs to Modernize Their Operations

The Loss of Downlink Spectrum will Have a Significant Impact on Video Operators, and Terrestrial Alternatives may be a More Practical and Cost-Effective Compliance Option



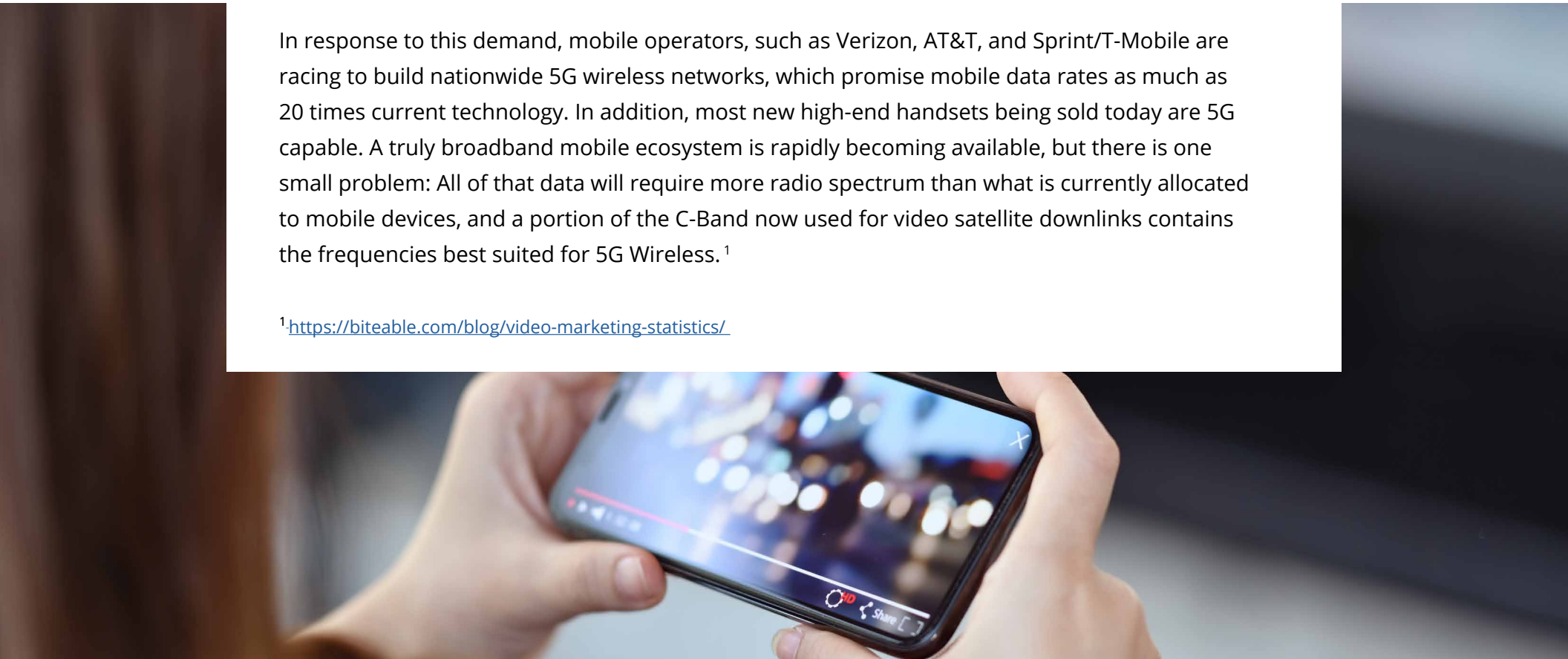
The Demand for Bandwidth

The thirst for mobile bandwidth in our society seems almost insatiable. Consumers are now demanding broadband capability in their hands at all times, anywhere they roam, and at bitrates recently only available via physical fiber and DSL connections.

The demand for video has not gone away – far from it. In fact, total video traffic is steadily increasing. However, we no longer wish to be tethered to any physical location in order to consume video, and we demand to be able to watch our desired content any time we choose. On-demand HD-quality video streaming to mobile hand-held devices is no longer "what's coming" – it's here and growing exponentially, by some estimates, as much as 100% per year!

In response to this demand, mobile operators, such as Verizon, AT&T, and Sprint/T-Mobile are racing to build nationwide 5G wireless networks, which promise mobile data rates as much as 20 times current technology. In addition, most new high-end handsets being sold today are 5G capable. A truly broadband mobile ecosystem is rapidly becoming available, but there is one small problem: All of that data will require more radio spectrum than what is currently allocated to mobile devices, and a portion of the C-Band now used for video satellite downlinks contains the frequencies best suited for 5G Wireless. [1]

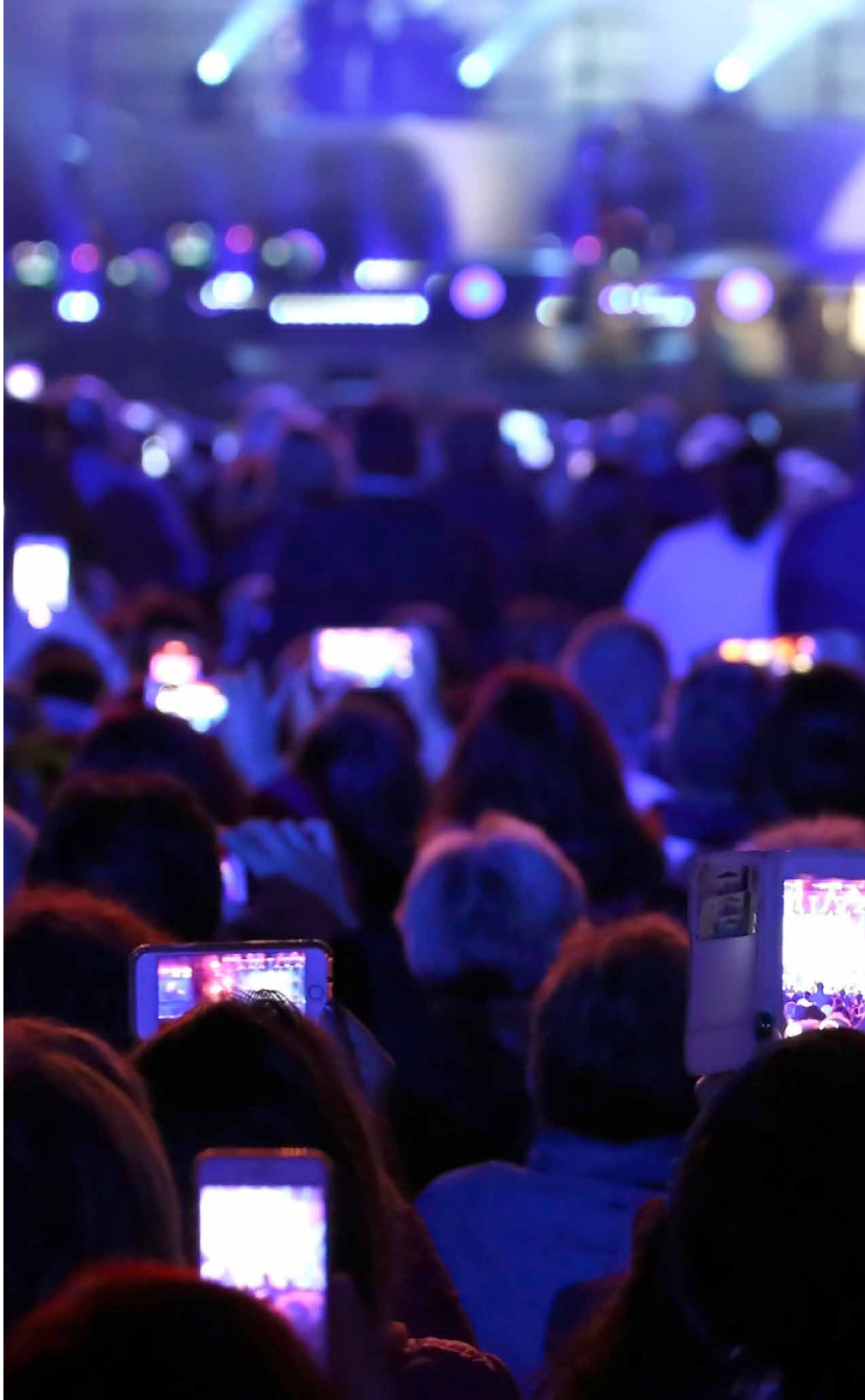
[1] https://biteable.com/blog/video-marketing-statistics/



What is Coming

In response to the growing need for wireless bandwidth, the Federal Communications Commission (FCC) approved a plan in February of 2020 to reallocate a large portion of the C-Band Spectrum from satellite downlink to 5G wireless systems. Specifically, the frequencies from 3.7 GHz to 4.0 GHz will be taken away from satellite operators, leaving them with only the 4.0 to 4.2 GHz band for their downlink signals. The 5.925 to 6.425 GHz uplink frequencies are unaffected. The newly freed-up spectrum will be auctioned in December 2020 to the mobile operators. Proceeds from the auction will be used to compensate satellite and video operators on the ground for the expense of moving all downlink signal transmission and reception to the remaining 200 MHz of spectrum.[2]

[2] https://docs.fcc.gov/public/attachments/DOC-362743A1.pdf



The Effect on Satellite Video Operations

Satellite downlink signals now operating in the frequency band to be reallocated must be moved to the remaining portion of the spectrum reserved for such use. However, there are currently not enough transponders in the sky operating at those frequencies. Therefore, operators such as SES, Eutelsat, and others will be launching new satellites, equipped with transponders operating in the 4.0 to 4.2 GHz band.

On the ground multichannel video programming distributors (MVPDs) will be required to move their reception facilities to the remaining downlink frequencies.

New Integrated Receiver/Decoders (IRDs) must be purchased and installed. In many cases, satellite receiving dishes must be added, unless existing receivers can be re-pointed to the new satellites in orbit without adverse service interruptions.

The effort and expense required on the part of the satellite operators and the video operators on the ground will be significant. But the FCC wants the reallocation completed as quickly as possible and has set an aggressive schedule for compliance with its order.

Time Frame for the Reallocation

The FCC order calls for the affected spectrum to be completely vacated and available for use by the 5G Wireless Operators by December 5, 2025. However, the FCC has also provided attractive compensation incentives to satellite operators for making the move more quickly. As a result, most of the satellite companies have now agreed to free up a portion of the spectrum for some major metropolitan areas as early as December of 2021, and to complete the entire move by December of 2023.

The auction for the newly available spectrum to mobile operators is scheduled to begin on December 8 of 2020. A clearing house will be established to send the collected proceeds from the auction to satellite video operators as compensation for the associated large expenditures they will occur.

Choices for Video Operators on the Ground

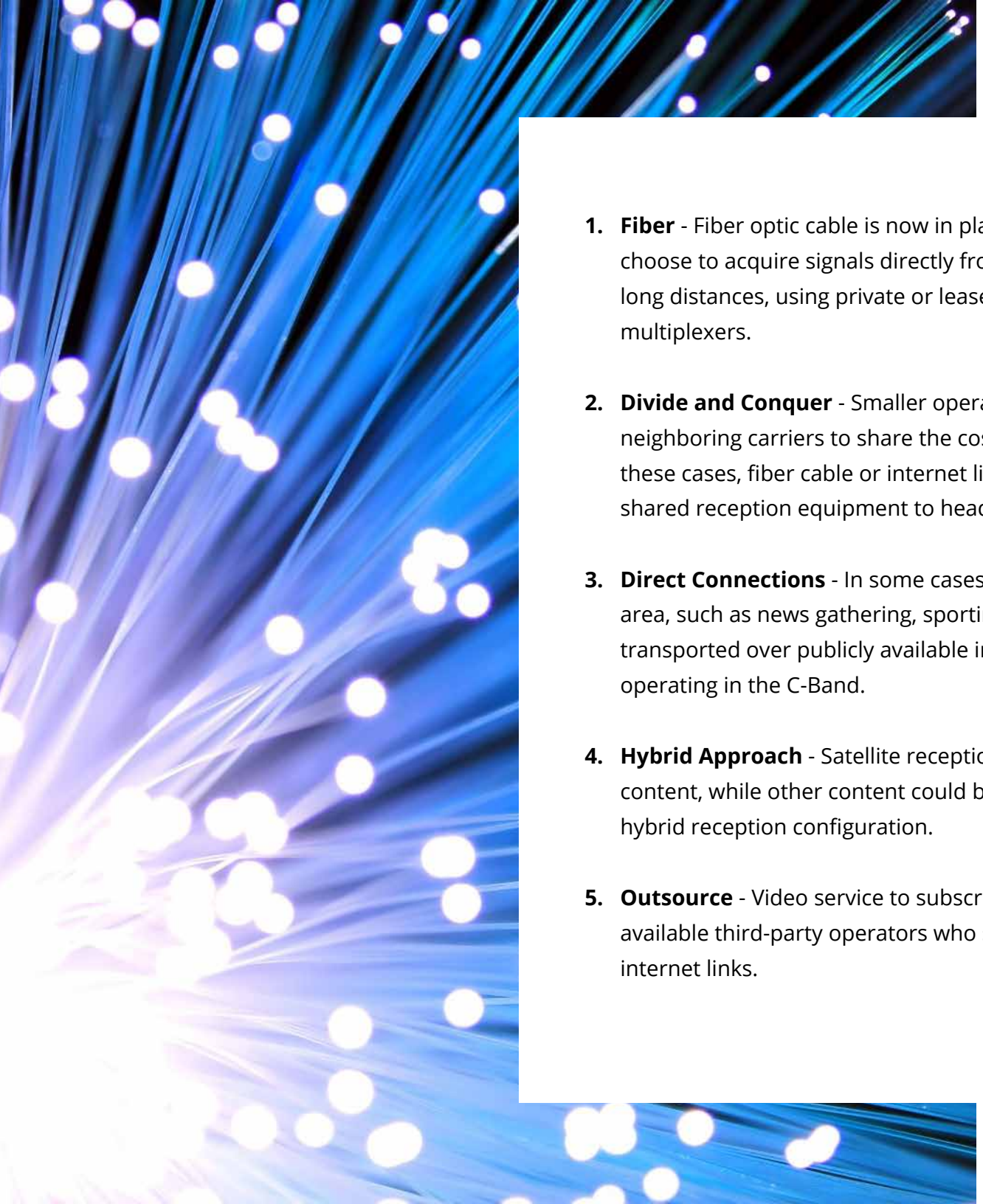
Video operators on the ground or multichannel video programming distributors (MVPDs) have no choice but to comply with the FCC's order. However, such operators do have options regarding compensation and reconfiguration of the necessary reception facilities:

- Some may choose to accept direct compensation from the satellite companies for any new reception equipment necessary, and thereby choose to continue receiving signals in the same manner as before.

- Others may choose the lump-sum compensation offered by the FCC which is based on a somewhat complex cost formula in exchange for making the necessary adjustments.

It should be noted that there is no requirement that MVPDs continue to receive their desired content in the same manner and with the same reception configurations as today. Indeed, many video operators will take advantage of this opportunity to modernize and simplify their operations.

Fortunately, many options are now available for video operators to either augment or, in some cases, completely replace satellite reception gear. Available options include:



1. **Fiber** - Fiber optic cable is now in place virtually everywhere. Operators may choose to acquire signals directly from content owners, even over relatively long distances, using private or leased fiber and/or virtual private links on fiber multiplexers.

2. **Divide and Conquer** - Smaller operators may choose to form alliances with neighboring carriers to share the cost of new satellite reception equipment. In these cases, fiber cable or internet links may be used to transport signals from shared reception equipment to headends or video offices some distance away.

3. **Direct Connections** - In some cases, content now originating within an operating area, such as news gathering, sporting events, PEG channels, etc., can be transported over publicly available internet, rather than use remote transmitters operating in the C-Band.

4. **Hybrid Approach** - Satellite reception could be preserved for some desired content, while other content could be transported over terrestrial links, creating a hybrid reception configuration.

5. **Outsource** - Video service to subscribers can be outsourced to one of several available third-party operators who serve customers nationwide over broadband internet links.

What MVPDs Will Need

Compliance with the FCC order will require careful evaluation of the available options to match the needs of each video operator. Depending on the reception equipment configuration chosen, operators will almost certainly require flexible and cost-effective products, capable of consolidating and processing signals from potentially numerous sources and arriving in various formats.

Fortunately, carrier grade solutions, such as the WISI Inca IP Video Platform are readily available, and already deployed throughout North America. For content originating within a service area, the WISI Chameleon Headend Platform offers an attractive means of collecting, encoding, and transporting such video signals.

In addition, all WISI products now support Secure Reliable Transport (SRT). SRT is now an industry standard, which allows broadcast-quality signals to be transported over traditional internet connections with high reliability and low latency. This capability allows MVPDs to now consider using terrestrial signal collection and distribution configurations in the network previously deemed “unreliable”. The resulting cost savings for implementing SRT could be significant, and potentially allows operators to comply with the FCC’s spectrum reallocation order more readily and economically.

INCA
IP VIDEO PLATFORM

- Use Inca for high-density video delivery between remote sites
- Optionally transcode to optimize codec, bitrate or resolution of HD and SD streams
- Receive full-line up at remote site for IPTV delivery

CHAMELEON
SOFTWARE-BASED HEADEND PLATFORM

- Use Chameleon for collecting content in various formats
- Connect directly with broadcast sites and transport content using SRT
- Receive SRT and output as QAM, Analog, ASI or SDI

Rely on 100 years of Innovation

Our team is available to help you evaluate the numerous alternatives you may have for compliance with the FCC's new order. We can help you design and implement networks that acquire and process high-quality video signals from virtually any source, and in almost any format. In addition, our award-winning built-in monitoring solutions can provide you with more reliable operations and an attractive total cost of ownership.

Contact your WISI sales representative or visit https://wisi.tv/contact to get started.

We're here to help.

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