*In this column, **Bhavani Raj**, Marketing Director, **Shenzhen AV Master Technology Co., Ltd**, directly brings his viewpoint on **Cat6 versus Fiber cables**, drawing the readers' attention towards choosing the right audio-video solution, significant in real time projects.*

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CAT6 V/S FIBER: EXPERT PERSPECTIVE ON CHOOSING THE NEXT AV EXTENSION

Technology is radically changing from Cat6 to Fiber, although not a new phenomenon, there are certain constraints and positive developments on both sides. However, I have seen many are in a state of flux nowadays, with the advent of new protocols in technology and in my opinion, I feel both the solutions are equally significant in real time projects.

Though many engineers are gradually switching from copper to light signals for several benefits like distance, and bandwidth, Cat6 technology is still ruling the market since this is the cost-effective solution in contrast to fiber.In addition, Cat6 solution is more flexible and widely available to the often-specific requirements like cascading or looping through receivers. Despite this, it is not limited to 100 meters range. Unlike traditional methods, it can be transmitted over 300-400 range by using the unmanaged switch. Additionally, this technological solution is transformed to a POC feature, which we haven't seen in the fiber yet. To name a few, system integrators are really admired for this hassle-free feature, and other features like 2K or 4K, plus with HDCP; HDR features are also commonly available in this technology, which I preferred not to discuss in this feature.

HDMI and Cat6 have a rare matrix feature, which is actually under-rated in the industry. I am not sure why this hasn't been brought up or massively promoted by any manufacturer or supplier in the market while this feature is first-rate in this segment.

Inspite of these benefits, there are also certain negative outcomes that can result from bulky and hefty cabling, definitely not for the bigger range, and it can be flawed in case of reverse power or electrification issues.

Numerous key factors contribute to fiber solutions. Perhaps, the most basic reasons are bandwidth and the range, especially in LED screen industry or projection mapping based companies that often work on 4K@120Hz or 8K@60Hz, which is one of the emerging needs based on the content. Hence, this is possible through the fiber media extenders to avoid the complex setup, which may lead to detrimental results as per the reported case studies.

Secondly, userscan have the access to downgrade or customise display resolutions through Extended Display Identification Data (EDID) switch. In addition, they can also extract the audio with additional ports available, which is more stable and reliable in comparison with Cat6anda more convincing factor from switch to the fiber. Likewise, other features that are absolutely vital, include the bandwidth speed 18 GBPS, which is more regular and it can be expanded up to 40 GBPS and more in the coming time.Indeed, unlike Cat6, when it comes to range limitation, these fiber signals can be transmitted over a bigger range through single mode and multi-mode without any frame loss or delay.

Aside from these benefits, fiber setup is expensive and the features like Cascading, POC, POE, and Matrixare barely available in this technology.

In conclusion, indeed, as our current environment is personalised, we tend to opt for only the technology that appeals to us. While both the solutions are potentially valuable, solution needs to be tailored according to the project, there should be an ease of accessing the technological information, and capability of extenders is based on the workings and exploration.