

Wires still give the edge

PRASANTH MENON
Mumbai, November 30

Structured cabling continues to flourish despite the popularity of wireless technology. The sheer fact that wired network offers better speed and is still more reliable gives it the edge over others. Any ethernet infrastructure built on CAT 5 and CAT 6 infrastructure, patch cables and other wired infrastructure is still relevant in many settings, despite the widespread use of wireless enabled devices due to the benefits it has to offer. However, the need for wireless is clear. Many industry experts are of the opinion that cable based architectures are necessary to meet the speed, bandwidth, quality of service, security and reliability needs of many users.

Today, the need for a reliable infrastructure is

Multimode Fiber, use of bend insensitive fiber, use of pre-terminated fiber and 10G (Cat6A) copper over entire data centers. We are thus keeping an eye on deployments in the field in future."

Apart from this, the changes in the technology in this segment are more or less governed by the growing demands in data centers. Mylariaiah JN, country technical manager, enterprise networks, TE Connectivity India said, "The rising cost of real estate, power consumption, cooling costs coupled with need to reduce carbon footprint to meet environmental demands and managing the efficiency through capex/opex control which is a key ingredient of service profitability/longevity. It has led to new technologies in cable management systems like plug and go solutions, high-density cabling mixed media

by the TIA/EIA standards and only ISO/IEC has recognized it as Class F standard. The original Class F standard was supposed to support 600MHz over a shielded solution and a different connector than a RJ-45 which is a standard connector for ethernet applications over copper. With the standardization of Category 6A by TIA/EIA and Class EA by ISO/IEC, the Class F has lost its purpose. Also, there are no activities in the standard organizations to support this standard of Cat 7 leave alone Cat7A."

IT managers constantly face the challenge of

Cable based architectures are necessary to meet the speed, bandwidth, quality of service, security and reliability needs of many users

more than ever before. Many new trends are emerging which seek out for strong, robust and dynamic infrastructure to provide optimum mileage and its ecosystem. Subhashini Prabhakar, CTM, Dax Networks says, "Cloud computing, 40G solutions, FTTH adoption, and data center implementation are few current trends likely to play a vital role in the market." Such technologies are the future and these will only be able to perform to optimum if it has the right IT infrastructure to support it.

Technologies today change quickly. There are several models or architectures that offer varying benefits to ITES. Storage variants like fiber channel, NAS and iSCSI, all have significant marketshare and different focus applications. Further variants such as iCoE offer support for some of these alternatives. Adding to this, Natarajan Viswanathan, MD, India and Saarc, CommScope said, "Picking a winner here is difficult. We know from history that switches, servers and storage hardware in use today will be outdated quickly. Platforms that look very attractive today will be eclipsed in the future. Structured cabling is designed to enable these changes. It may be a mistake to give up on structured cabling and invest in a network switch as some vendors would like to propose to build a structured cabling system that will support any and all existing technologies and hopefully, build growth. It would be ideal to keep your options open for different topologies and tier structure, mix media, copper and fiber to maximize flexibility and minimize cost."

Elaborating in detail, Viswanathan added, "The 10G Over copper Category 6A/Class EA was ratified in 2008 and now we can see more deployments by customers. The announcement of OM4 fiber paves the way for 40/100G up gradation in the data centers and backbone infrastructures. The management of the physical infrastructure plays a vital role and more and more customers are adopting the same."

Adding to this, Anand Mehta, VP, marketing, Schneider Electric said, "The recent technological changes that India has been rapidly adopting in structured cabling solutions are deployment of OM4

platforms that address these issues."

Cat-7A is a latest technology that is catching up well across all verticals. Cat 7 was adopted as an interim standard when the standard to deliver 10G over copper took some time in the standard organization. After the 10GBASE-T (CAT6A) ratification in 2009, that supports data rates of 10Gbps up to a distance of 100 m @ 500 MHz bandwidth as an end-to-end system and Cat7 that supports data rates of 10Gbps up to a distance of 100 m @ 600 MHz bandwidth as an end-to-end system does not offer much difference.

IEEE recognized the potential for high speed in data centers and server clusters where storage rates are doubling every 12 months. IEEE is currently thinking of ways to deliver 10 Gbps over copper cables and have started to study the technical and economic feasibility of speeds beyond 10Gbps over copper. Furthermore, the agency is evaluating the possibility of 40Gbps data transmission (40GBASE-T) over horizontal balanced CAT-7A cables for smaller distances if not for 100 m so that it can be successfully used within the DC environment where statistics show that 95% of the links are shorter than 40-45 m within the DC.

Explaining the nitty gritty of this technology, Mylariaiah said, "TE Connectivity capacity analysis show that the Cat7A cable and components are capable of 40 Gbps transmission practically, provided it has high EMC performance, 360° superior shielded designs where no UTP system will be able to support and Class FA defined for 1,000 MHz bandwidth as an end-to-end system."

Adding to this, Prabhakar said, "Cat 7 and 7A allows sheath sharing and enables multiple applications running on the same 4-pair cable. As the categories build from 5e to 7, the speed of data transfer across the network wiring increases as does the headroom for advanced network applications. For example, while category 5e network wiring is rated to 100 MHz, standards compliant category 7 cables provides 600 MHz data transfer rates."

However, there are still critical issues related to Cat 7. Elaborating on the challenges, Vishwanathan said, "Even as of today, the Category 7 is not recognized

how to optimize their data communications requirements. In addition to traditional data transfer, new IP reliant applications such as VoIP, video streaming, line feeds and surveillance systems are continually emerging in offices. Consequently, faster and more reliable infrastructures are required to ensure that business critical applications become future-proof and ROI is optimized. Providing service in a broadband access LAN, using a copper cable approach, has the advantage of the network being highly-dependable and cost-effective. This will benefit the service providers over campus settings like hospitals, industry compounds or universities with facilities spread over several buildings so that a quick service upgrade could extend new service offerings. Also, within server farms and data centers, short copper connectors are preferable.