

## Structured Cabling

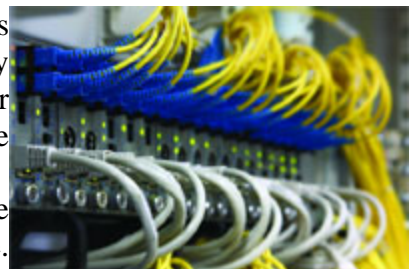
### Backbone of the IT infrastructure

Although the Indian structured cabling market had to face the wrath of the global economic crisis last year, it is slated for steady growth in the years to come, writes **Nivedan Prakash**

The Indian structured cabling market met with the same fate as any other IT segment last year. If we look at some of the industry reports, then the growth of this market in 2009 was negative for most of the vendors owing to the global recession. In fact, the market saw a negative growth about 10-15% last year.

The first half of 2009 saw vendors having to review and revise their expectations from a revenue and market share perspective.

Although the second half did see a remarkable comeback, it was not comparable to 2008 or 2007. Around Rs. 650 crores of products were sold.



### Fuelling this market's growth

In 2009, while certain sectors saw slow growth, the market was buoyed by the government and telecom verticals. They invested in network infrastructure and kept the growth rate from dipping too low. Again, high demand for data centers and also a need for server virtualization and VoIP were other growth drivers. There was continued investment in data centers.

Nareshchandra Singh, Principal Research Analyst at Gartner, said, "In the government sector, IT projects were unaffected as compared to those in general enterprises. On the enterprise front, there were certain segments like data centers where growth was seen. This was because data centers are still considered to be strategic and people kept on investing."

Fiber-to-the-Home (FTTH) was one of the major drivers for this market. This changed the way residential and commercial buildings are wired with high speed connectivity to support voice, data, and video. Besides, infrastructure and to a certain extent BFSI contributed towards the growth.

"Copper is and will continue to be the growth area for the Indian SCS industry i.e. Cat6, Cat6a. Demand for Intelligent physical layer management systems (IPLMS) and fiber will grow, in the latter case mainly for ITU-652D with better PMD and high SBS threshold SM fiber and Leaf attributes fiber as well as multi mode OM4 Clear Curve fiber i.e. 10 Gbps over 550 Meter (Draft Stage) will grow. We also expect tier IV green data centers to be a growth area," added Debraj Dam, Sales Head - Strategic Accounts, Digilink.

Organizational growth, use of converged networks, new enterprise applications, and demand for data centers have boosted demand for structured cabling solutions. There is also a need to future proof networks and structured cabling fulfills this need.

Alamuri Sitaramaiah, Director - Sales and Marketing, Fluke Networks India, said, “IT is being increasingly called upon to enable the delivery of business services and to align IT objectives to business goals. While each component of the IT infrastructure—connectivity, communications and computing—is critical to such business delivery, structured cabling being the foundation of the infrastructure that outlasts (no one changes cabling systems every other year) investments into communication and computing, no doubt merits increased importance.”

### **Intelligent cabling systems**

There has been an uptake of intelligent cabling systems in the Indian market, wherein Power over Ethernet (PoE) and Intelligent Cabling has enthused the cabling industry. PoE is often a requirement for VoIP and wireless access equipment and intelligent cabling systems help keep infrastructure connectivity documentation up-to-date. The basic advantage of this system is that it saves network downtime, increases redundancy and TCO. The system’s intelligent manageability feature will support better monitoring and do away with human error. OPEX is controlled as the entire network can be controlled centrally.

“The passive cabling components can be managed by using management software available with the intelligent cabling solutions. This system can be installed or fixed in an existing rack with proper air circulation. The LAN performance will increase with network downtime going down. In a recent trend, vendors prefer to go in for retrofitted intelligent products, which can be upgraded as intelligent patch panels in the future as per the users’ requirement,” asserted Subhashini Prabhakar, Chief Technology Manager, Dax Networks.

Also, as enterprises are increasingly trying to work on zero downtime platforms, they have realized the importance of a well designed and robust cabling infrastructure and are ready to make meaningful investments and deploy state-of-the-art solutions.

A well designed, installed and documented cabling infrastructure is the foundation for an enterprise IT infrastructure. While downtime is easily detected and reported, it is degradation in the performance of the cabling system that goes undetected. Both downtime and performance degradation do impact the performance of business applications and, in turn, that of the whole business.

Prasanna Kumar, Regional Director, NS - India and SAARC, Leviton, added, “Although the specifics of a structured cabling system are unique, the overall components and the methods used to complete and maintain a structured cabling installation are relatively standards based. The standards are not yet enforced by law, but they are essential for a structured cabling system that performs well. Standards provide for consistency of structured cabling design and installation, conformance to physical and transmission requirements. Leviton provides a higher value and increased performance through its innovative solutions much beyond that specified by the standards organizations.”

A study by the Aberdeen Research Group has reported that enterprises are likely to experience 9% revenue loss due to poor application performance. Hence, a well designed, installed and documented cabling system is vital to enterprise application performance and for realizing the competitive edge that investments into IT were made for.

Moreover, enterprises are now standardizing on Cat6 or Cat6a for their structured cabling with zero downtime platforms. They are ready to invest 25% of the active equipment cost for the structured cabling infrastructure, to deploy error free and easily managed passive solutions.

“Organizations are insisting on 99.999% uptime. Though there are different levels of availability, most vendors should look at providing maximum uptime. 70% of downtime is a result of faulty installation of the cabling infrastructure. The responsibility of high quality installation rests with both the vendors and their system integrators,” stated Dileep Kumar, Director - Product Management, ADC India Communications.

Cabling infrastructure is a strategic business resource. It carries everyday messages and mission-critical data, and makes communication possible between people and business processes. The use of intelligent cabling has proved that downtime can be reduced drastically and hence the industry is moving towards this solution.

## **10 Gbps and beyond**

Indian organizations are looking towards 10 Gbps and beyond, with 40 Gbps and 100 Gbps Ethernet standards already in the works. With markets maturing in our country, we are witnessing a need to manage ever increasing amounts of information. That’s the reason why companies are investing in SANs and FCOE, which in turn, is driving demand for 10 Gbps.

Structured cabling is becoming a major requirement in enterprises, disaster recovery centers, R&D institutes, server farms, and data centers. It is also used for high-performance computing clusters, scaled up and consolidated servers, real-time video streaming on Web servers, workgroups involved in data-intensive applications, collaborative activities, and PACS in the healthcare context.

Of the total structured cabling market, 10 Gbps has a market size of approximately 2%. However, most Indian companies that go in for 10 Gbps, although a bit late in adopting this technology, are demanding the most advanced features in this technology. India has seen a fair amount of adoption of 10 Gbps technology, both in private enterprises and the government. Having said this, it is mostly used for the purpose of LAN aggregation. As per industry estimates, the market is poised to grow by about 15% in 2010.

Gaurav Ahluwalia, MD, R&M MEA, pointed out that 10 Gbps adoption is expected to reach 50% of all installations in India by end-2014, which roughly translates into a growth rate of approximately 80% year-on-year. IEEE is working on new protocols to support 40 Gbps and 100 Gbps over Ethernet. The 40 Gbps requirement is targeted at the data center and studies show that many data center operators plan to install 40 GbE systems as soon as they become available. For this, a minimum of OM3 cabling is recommended.”

With regards to 40 Gbps and 100 Gbps, we will similarly see greater demand. However, the IEEE P802.3ba Ethernet Task Force has to frame the guidelines for migrating data centers from 10 Gigabit Ethernet to 40 Gigabit and 100 Gigabit Ethernet data rates. These guidelines are required as data center environments require solutions that enable a smooth migration to 40/100-GbE.

Meanwhile, standards committees are getting ready with study groups to develop 40 Gbps and 100 Gbps. However, these technologies will take some time to evolve and gain acceptance in terms of deployment.

Additionally, with the network core moving to 10 Gbps, gigabit to the desktop becomes a practical reality. The NICs in desktops/laptops and the switch ports are available with

10/100/1000 Mbps by default. The Cat6 end-to-end cabling system is the right choice to support the desktop/laptop on Gigabit Ethernet and the core will be on Cat6a or fiber depending upon the distance limitation.

However, if we look at some industry reports, gigabit Ethernet to the desktop is already in place. But 10 Gbps to the desktop lies in the future. Companies have become aware about the need for future proofing and keeping the ROI and OPEX in mind, they are slowly migrating to 10 Gbps. The main limitation to 10 Gbps on the desktop is the lack of killer applications at the desktop level that need this kind of connectivity and the cost of 10 Gbps interfaces.

### **Cat6 – king of the heap**

It is believed that Cat6 has the biggest chunk of the cabling market. Category 6 cable is typically made up of four twisted pairs of copper wire like other cables. However, what sets it apart is one particular structural difference: a longitudinal separator. This separator isolates each of the four pairs of twisted wire from the others, which reduces crosstalk, allows for faster data transfer, and gives Category 6 cable twice the bandwidth of Cat5.

Not only is Category 6 cable future-safe, it is also backwards-compatible with any previously-existing Cat5 and Cat5e cabling found in older installations.

K. K. Shetty, Director - Tyco Electronics India, commented, “It is, indeed, true that Cat6 continues to rule the SCS market. Category 6 System has been designed to keep pace with the evolving requirements of the Category 6 standard. Cat6a is already in place for businesses looking for higher bandwidth. It is capable of supporting 10G and is currently mostly in use as backbone cabling for data centers in India. With this technology ably meeting the specifications laid down by the standards it logically becomes the first choice of both large and medium enterprises that are not looking for extremely high bandwidth applications immediately but can still make their network future ready.”

Currently, Cat6 is largely deployed as a cost-effective media of choice and accounts for almost 85 to 90% of the installations today.

However, Cat6 may be unable to fulfill the bandwidth requirements of applications in the future. Therefore, as companies start preparing for 10Gbps, corporate networks have started migrating to Cat6a. The next standard to be in place across India will be based on 40 Gbps and beyond. Though Cat6a has been ratified by the standards bodies, there is still a small price and installation challenge that needs to be overcome by both customers as well as cabling system integrators. Further, Cat6a got ratified at a time when the industry was experiencing a significant downturn and did not probably get the attention that it merited. Cat6a will gain acceptance in days to come, and it is likely to be a long time before Cat7 emerges.

### **Marching ahead in 2010**

Overall, the Indian structured cabling market is expected to see good growth in 2010. The industry expects it to grow by 15-20%. If telecom and the government verticals kept the industry afloat in 2009, it is expected that other verticals like IT/ITES and BFSI will also pick up along with the defense and infrastructure segments. Data centers will continue to attract investment. The need for high bandwidth will drive trends like server virtualization, 10 GbE adoption and fiber in both the backbone and in horizontal cabling.

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