



Structured cabling to become Rs 1,000 crore market

The future looks bright for structured cabling with almost all the major industries vouching for it

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Tuesday, June 29, 2010

In the wake of growing need of IT-enabled services across all verticals, structured cabling has become a key to every infrastructure and is all set to grow at a phenomenal rate. Nearly 40 percent of its total market is expected to be driven by the datacenters. According to IDC's research, the industry is expected to grow at a CAGR of around 20 percent over a period of the next few years. The SMBs and residential and commercial complexes are fast becoming the key drivers for its growth. If the industry pundits are to be believed, the structured cabling market in India, will turn out to be around Rs 1,000 crore industry by the end of 2010. Copper cables constitute of around 70 percent of the structured cabling business in India, while fiber has still a long way to go.

Trends

With the rise in IT/ITeS sector, that includes telecom as well as datacenter, the trend is encouraging for those who are into the structured cabling business. Speaking to the DQ Channels, Gaurav Ahluwalia, MD, R&M India said that fiber optics are getting acceptance due to its pre-polished connectors, pre-terminated fibers and MPO fiber plug-and-play connection systems. Fiber optics also aids in easy installation and reduces the risk of error.

KK Shetty, Director, Tyco Electronics Corporation said that there is a shift toward converged networks and fiber, which would also play a significant role in converged technologies. "We see this trend in new township networks where enterprise as well as telecom networks are getting intertwined to offer the best converged network solutions to the end-customers. Apart from that, datacenter implementations have gathered huge momentum and the trend is likely to scale up even more in the next few years with new government infrastructures and IT projects getting implemented," said Shetty.

Subhasini Prabhakar, CTM, Dax Networks said that 'Fiber to the home' (FTTH) is one of the major drivers of structured cabling. According to her, this would change the way in which residential and commercial buildings are wired with high-speed connectivity to support voice, data and video. "Tool-less design, datacenter cabling, field crimpable connectors for FTTH solutions, intelligent cabling and 10G over copper are the current trends in its adoption," said Prabhakar. "Installers do not have mental block on fiber termination techniques, and most of the installers have proper tools and equipments to do the termination accurately with minimal loss," she added.



There is a range of solutions available in structured cabling that can be customized

KK Shetty, Director Tyco Electronics



The key verticals that would drive growth in this space are telecom, manufacturing, ITeS, government and PSUs

Subhasini Prabhakar, CTM, Dax Networks

Prasanna Kumar, Regional Director-India and SAARC, Leviton said "10G cabling is used for high-performance computing clusters, datacenters, 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," he said. According to Kumar, India has seen a fair amount of adoption of 10G technology, both in corporate enterprise and the government sector, and the most significant usage is in the LAN aggregation. "We estimate the market to grow by about 15 percent in 2010. Also, the newer technologies like cloud computing are fast emerging within the industry and would accelerate the growth," said Kumar.

"Structured cabling has witnessed several changes and is becoming an important deliverable in IT investment. CIO's are looking at installing the latest technologies like the 40 Gig solutions on copper and 100 Gig solutions on fiber. Such technologies ensure that the RoI of the enterprise is protected," said DS Nagendra, GM-LAN, Nexans.

Solutions

"The fiber solutions that are available, include OM2, OM3, OM4 for multi-mode and OS1 and OS2 for single mode," said Ahluwalia. The security solutions combined with intelligent systems reduce downtime, and have detective controls. These features were first introduced in copper cabling solutions, and today it is also available in optic fiber solutions. 'Fiber to the home' Solutions are targeted at large and medium enterprises. It allows system and network integrators to extend fiber optic broadband all the way to the last access point," he added.

"Office network solutions today range from Cat 5 and Cat 5e to Cat 7a in copper and OM1 to OM4 in fiber; this spectrum addresses low bandwidth to 10G networks. For high speed, high bandwidth networks especially datacenter and disaster recovery centers or 10G applications, we find Cat 6a STP gaining momentum because of the advantages they have over 10G UTP. Fiber installations have also gone up but their use is mainly limited to backbone cabling," said Shetty. "Fiber cabling is only a little more expensive than copper cabling systems, the cost of active components for fiber networks makes the entire network extremely expensive," he added. Shetty

further said, "Knowledge centers, BPOs, software development centers with data centric environments require technologies that allow IT managers to track MACs in real-time while offering security, better asset management and RoI; the intelligent infrastructure management system offers all these. In addition, high density connectivity management systems that include factory terminated plug-and-play connectivity products like MPO, MPOptimate and MRJ21 and AMP Sigma Link cabling systems, allow faster installation and MACs; high-density cabling platforms are also in vogue as with increased port density these also offer, smaller datacenter, real estate footprint and allow for better utilization for real estate."

"Nowadays, structured cabling technologies are designed to cater to all the demands of a typical datacenter. The 10G solutions that are available on both twisted pair (Cat 6a-shielded and unshielded) and fiber are effective for bandwidth hungry applications. While twisted pair is the norm in most Indian network infrastructures, technologically fiber is a more superior solution and today's datacenters adopt both twisted pair and fiber, singly or in combination to derive most effective solutions for their needs," said Prabhakar. "10G over copper, use of newer single mode fiber in LAN, products and technologies suitable for FTTH, entire range of products specifically designed for data centre applications, then there are hybrid products for residential applications," she further added.

"There are end-to-end structured connectivity solutions including all solutions like Cat 5e, Cat 6 and Cat 6a in copper solutions, OM3 and OM4 solutions in fiber, cable management solutions, intelligent PDUs, Wireless and POE, besides high performance for datacenter solutions," said Kumar. "Moreover, the solutions extend to homes, lighting, wireless and power," he added. "All types of cabling prevalent in India, such as UTP and STP on copper and single mode and multimode, are available on fiber. Cat 5e, Cat 6, Cat 6a and Cat 7 are the kinds of prevalent solutions," said Nagendra.

Challenges

"Today, fiber optic 10GB solutions are more prevalent than copper. One reason is simply because the supporting active component market is more mature with fiber. The 10GBASE-SR standard was released in 2006 and we started seeing active components with this technology integrated in late 2008. As this market grows and prices fall, we will see more copper installed to support 10GbE applications. Cost is a factor, but also flexibility, overall robustness and familiarity play a role," said Ahluwalia.

"With the new trends in Copper, the installation has become more difficult and stringent with new parameters which have made field testing more complex such as equal-level far-end crosstalk (ELFEXT), Powersum equal-level far-end crosstalk and Alien Crosstalk, for which we need highly skilled installers who can actually analyze these parameters especially when there is an issue," said KK Shetty. "For Cat 6 (1G) & 10G, quality of the installation becomes more critical where the engineers must use the best of the tools available in the industry which can deliver quality terminations, since any termination which is not up to the standard can downgrade the quality of the network and can render the best of the active devices useless. Apart from the terminations of the jacks, further care is required with reference to the cable pull tension and bend radius maintenance, which is one of the critical parts that affect the overall

performance of the cabling system," he added. According to Shetty, this is important especially for 10G on UTP system, because of the Alien

Crosstalk issue which is a critical factor and cannot be canceled by DSP technology; and can only be mitigated by a shield, space or glass. "10G Ethernet is possible over single-mode and multi-mode fiber, and the Cat 7 STP solution. Since Cat 7 STP is a fully-shielded solution, its installation is difficult than a UTP solution. The difficulties that exist in installation of Cat 7 lead to the development of 10G Ethernet over UTP," Prabhakar said. "Factors influencing adoption of 10G solutions are technologies like Power over Ethernet, Voice over IP, Security over IP etc. In fact, 10G adoption is growing at a rate of 10 to 15 percent per year due to already published standards by IEEE and TIA. Demanding users, new applications and lower prices drove higher demand for Gigabit Ethernet and will soon make the 10G Ethernet a necessity in the enterprise backbone network. This will only increase further adoption of 10G into the horizontal installations," said Prasanna Kumar. According to Nagendra of Nexans, Cat-6A/10GE installations need more precision installation technique to derive the optimum performance of the cabling. "One needs to ensure minimum separation distances from electrical cabling, minimum sheath removal, and minimum pair untwist at the termination end and also proper bundling of the cables. This will be more stringent for UTP solutions as it can be prone to EMI very easily. Shielded cables can protect from EMI and crosstalk from one cable to the other in a much better way," he said.

Pain

Points

Ahluwalia believes that the aggressive price war waged between companies to win large projects have today, removed the focus from delivering quality product and solutions to customers. "Structured cabling constitutes of just about five percent of the total cost of the network infrastructure. While earlier most enterprises did not give much importance to structured cabling, now with increase in bandwidth intensive application coupled with demands for higher network uptime, price has come into play in most networks with performance taking precedence," said

Shetty. "The price trend varies from vendor to vendor as per the current raw materials, and results in cost fluctuation. At Dax, we design solutions as per customer requirements, and offer them the best with affordable price compared to our competitors' products and solutions. The fluctuating global copper prices have not had a significant effect on the pricing structure. Since cabling is a part of the entire IT infrastructure spends, such price differences do not have any major impact on the adoption of structured cabling solutions," said Prabhakar. Price is a very

important criterion in a customer's decision making process, but majority of customers look for real value for money. While they want nothing but the very best, they also want the solutions to be affordable," said Kumar. "Today with cabling we see a lot more issues with reference to cabling, as the copper price is oscillating both ways. Apart from that, currency is also fluctuating," said Nagendra. "The distributors and the SIs understand the changing scenario and we are explaining the same to the end users which is being understood by the decision makers of the enterprise," he added.

Adoption

According to Ahluwalia, the adoption is boosting up with investments made by the government sector. "The rise in datacenters has scaled up growth of the structured cabling industry; however, trends indicate that there are several other factors that would contribute to its adoption in the

years to come. These are growth infrastructure projects both private and public, government enterprises, development of new townships, SEZ projects, consolidation and growth in manufacturing, expansion in BFSI and telecom networks," Shetty said. "SMBs are aware of the critical nature of structured cabling and would even adopt it. But it is important to note that it is not the cost of SCS network that is the road block but the cost of the entire IT infrastructure. While it is easier for large enterprises to absorb IT costs, the same is a challenge for SMBs. With cloud computing gaining momentum, we foresee SMB business picking up as this would allow them to deploy simple computer networks without the headaches associated with large IT infrastructure in terms of managing and maintenance," Shetty further added.

"The prolific area where structured cabling is expanding horizontally is datacenters. This new niche market is fast developing and can provide renewed growth for structured cabling system suppliers. Datacenter cabling is a new developing growth market for both the fiber and the copper SCS worldwide," said Prabhakar. According to her, structured cabling continues to be a vital link connecting the components of IT infrastructure. IT infrastructure connectivity has come a long way from wired copper lines and fiber lines to wireless technologies such as Wi-Fi, WiMax etc. However, despite the advent of these wireless technologies, cabling, especially structured cabling continues to be the backbone of IT infrastructure. "The penetration and education is the key here in addressing the SMB segment. Vendors need to constantly innovate new ideas to make the solutions interesting and relevant to this segment. While there has been a significant growth in this segment over the years, there is still huge potential," said Kumar. Nagendra said that, the adoption of structured cabling in the SMBs is high.

The Roadmap

"Manufacturing segment has also contributed to a large portion of our business and we continue to see investments from this sector in the future as well," said Ahluwalia. Shetty believes that, the industry would grow in tandem with commercial expansions in B, C and D-class cities in India which are gearing up to set-up IT infrastructures. Cloud computing would result in more and more Internet datacenters that require specialized structured cabling technologies. "The key verticals would be telecom, manufacturing, ITeS, aviation and PSUs. From an applications perspective, it is clearly the datacenter requirements for which India is seen to have a larger potential compared to rest of the world," said Kumar. The cabling industry is on a road of revival as IT investments are picking up.

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