



Networking
Special **STRUCTURED CABLING**

Raring to go

In an extremely competitive environment, the industry can look forward to excellent sales and innovative installations.

The structured cabling industry is in a very exciting phase. The market is poised to continue on the steady 15-20 percent growth path for the next couple of years, after which, for at least five years, there is expected to be a multi-fold growth. The Government has approved 700-plus Special Economic Zones (SEZs); each zone may absorb an average of Rs 100 crore of investment for connectivity. More than one hundred new airports are planned and renovation of a few is in the offing. Telecom service providers including BSNL, Reliance, Bharti Airtel and Vodafone and some new licensees have huge investment plans.

Enterprises like Infosys and Wipro campuses have 6-8 buildings each, averaging to 120,000 nodes, all wired up offering connectivity to about 20,000 employees in each campus, with approximately 4 nodes per employee. Contact centers, shift in trade centers to tier B and C towns, luxury villas and state-of-the-art homes requiring fibre-to-home connectivity with multiple nodes and customized solutions, the increase in PC population, all indicate requirements of major structured cabling installations.

The market may be broadly segmented in three sections. The low end segment, typically constituting 10-50 nodes, caters to the retail segment and private sector, and requires

distributor-level attention. The mid segment (50 to 250 nodes) requires solutions too. The high segment (250 nodes onwards) is totally different. Turnkey solutions are required, and typically these are for buildings, STPI units riding on huge data centers.

The unshielded copper cabling continues to dominate the market. 2006-07 saw transition from Cat 5 and Enhanced Cat 5 to Cat 6 systems, which constituted 56 percent of the Indian structured cabling market in 2007. Though fiber cabling systems are only marginally more expensive than copper cabling systems, fiber cabling has not really taken off, and copper cabling typically represents over 80 percent of a project's cabling value.

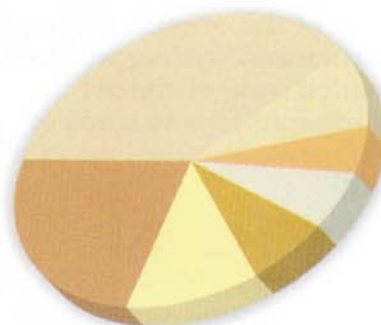
Fairly large deployments of 10GE in the backbone especially in data-centric environments were also seen. 10GE also facilitates bandwidth-intensive applications such as VoIP and digital video conferencing. Enterprises can locate their data centers and disaster recovery centers in different cities, and yet get faster access.

Category 7 undoubtedly gives full compatibility to 10/100/1000 Mbps networks and is the fastest cabling standard. On copper it supports high speed transfers but can go only upto a limited distance.

Another key trend is intelligent cabling solutions. Enabling possibility of troubleshooting immediately, it reduces the cost of ownership by solving

INDIAN STRUCTURED CABLING MARKET
Total Rs. 829 crore

Vendors	Units	Share (%)
Tyco	300	36.2
Commscope	200	24.1
D Link	100	12.1
R&M	55	6.6
Molex	50	6.0
ADC Krone	44	5.3
Others	80	9.7



* Including Sterlite, TVS ICS, PDR, Nexans, Panduit, Legrand, Belden, Clipsal, Dax, Siemon and Finolex

Even as technologies evolve rapidly, it is still the unshielded copper cabling that dominates the Indian Structured cabling market. Last year saw transition from Cat5 & Enhanced Cat 5 to Cat 6 systems. Though fiber cabling systems are only marginally more expensive when compared to copper cabling systems, fiber cabling has not taken off in a big way yet. This is because the active components that support fiber infrastructure are extremely expensive and escalate the total network cost to the prohibitive level.

issues like unplanned downtime and inefficient manual moves, increases the network management efficiency and network security.

The advent of MNCs in ITeS segments, banking and finance verticals has paved the way for brisk sales. The Indian data center market has been the primary key driver. Estimated at Rs 410 crore in 2007, it is expected to double by 2009. Manufacturing and retail segments too are all set for unprecedented growth, and structured cabling receives a major spin off from their growth.

Data centers need careful infrastructural designing. Cabling must support current bandwidth needs and anticipate migration needs to higher network speed requirements for at least ten years; cable protection; proper bend radius; and separation of cable types in horizontal pathways must be maintained. Cable management, cooling and power requirements need to be carefully worked out.

The Indian market is no doubt among the top five markets in Asia, but it faces some inherent challenges. Shortage of manpower and capable engineers to ensure quality installation is a major cause of concern. Increasing prices of copper and appreciation of the rupee may force manufacturing plants to look for alternate locations.

The Indian market for structured cabling is estimated at Rs 829 crore in 2007, a 37 percent increase over last year. Tyco continues to dominate the market with a share of 36 percent, followed by Systimax with market share of 24 percent and D Link with 12 percent. R&M, Molex, and ADC Krone each command 6 percent of the market. The year 2007 saw an increase in activity from TVS ICS, PDR, Sterlite, Nexans, Panduit, Legrand, Belden, Clipsal, Dax and Siemon.

This year was not as buoyant as expected. The government procurement was slower than anticipated. Currently, although the US slowdown impact is not being felt, some projects may get deferred.

Telecom companies are now not only selling voice, the revenue model has changed to VAS and SMS, placing pressure on the data centers. Very specific requirements of customers have to be met, which require time, design

and meeting stringent performance standards.

Success will primarily be determined by how the structured cabling companies respond to the rollout plans of the service providers, the strategy followed by the service providers themselves and the speed with which they are able to provide connectivity. Since the structured cabling vendors understand the intricacies of how to terminate the fibre, and the intricacies required to provide convergence from the integration side, they become the obvious choice. As DTH services and the like can now be offered on the same cable, the service providers will need to give unlimited connectivity, and offer a package, perceiving it as a fixed cost. It remains to be seen if the service providers can spiral their module effectively.

GLOBAL BACKDROP

Worldwide, the market is expected to grow from Rs 6,273 crore in 2008, at a compound annual growth rate (CAGR) of 13.7 percent, to Rs 119,310 crore by 2013.

The largest market is the Americas, led by the U.S. The growth in the U.S. market is expected to be fostered by the addition of new IP subnets to the enterprise's existing core networks. In the next five years, the U.S. market is expected to deploy enormous amounts of copper cabling to support VoIP applications by connecting each individual VoIP telephone to the existing network.

On a global basis, the growth in fiber cabling will surpass growth in copper cabling during the next five years. In 2008, fiber cabling accounted for 52.7 percent of the total global market. By 2013, it is expected that fiber cabling will account for 60.1 percent of the total global market. It appears Cat 5e is down but continues to find takers in very small, individual and SOHO networks, while Cat6 would remain at the centerstage, with lot of interest in single mode fiber as backbone. Cat 6A and Cat 7 will have higher share but will remain confined to niche markets. As the networks and performance demands scale up, 10G would be the preferred choice of the vendors as well as clients.



Shifting from Layer 2 to Layer 3

The enterprise switch, the first point of entry into the network, provides additional converged services and maintains its steady growth.

The enterprise switch market is poised for a 12 percent increase in 2007-08, and is expected to be at Rs 2350 crore. Cisco continues to dominate the industry with a 75 percent market share. The balance 25 percent market is shared primarily between D Link and Nortel. Other brands include HP, 3 Com, Netgear, DAX, Enterasys, HCL, Linksys and a few others. HP is threatening to give Cisco a run for its money. The team believes that till now, Cisco had no real competition. With HP's presence via its channel partners and service centers, complete range of products and lifetime warranties, the leader will find the going tough.

Basic Layer 2 switches and mid-range Layer 3 and Layer 4 switches are contributing maximum sales volume, while high-end Layer 5, Layer 6 and Layer 7 contribute high value for the vendors. With the increase in awareness on the business benefits that can be brought by managed switches over low-end unmanaged switches, a clear shift is happening from Layer 2 to managed Layer 3. The education and e-governance verticals are currently relying on Layer 2 switches, and will in all probability too transition to Layer 3 gradually.

Many organizations are operating at multiple

geographical locations, necessitating reliable inter-office connectivity through wide area networks. Security is a matter of concern in such environments, especially when wireless connectivity is established. Switches are often incorporated with intrusion detection systems, intrusion prevention systems, antivirus protection etc. Port authentication and MAC address filtering are some features that bring network security down to switch port level.

The IT/ITeS segment continues to be the largest contributor growth. Investment in building and upgrading datacenter infrastructure are increasing. Government's spending on e-governance projects like state wide area networks (SWAN) and state data centers (SDCs) drive the demand for switches. Segments like retail, logistics, manufacturing, education, and hospitals boost the demand.

With the increase in the total number of end points connected to LAN and increasing diversity of traffic flows on the LAN network, this market is expected to continue to witness 10-12 percent growth. The next couple of years may see increasing popularity of Layer 3 switches. Technological advancements will have to continue, as will specific challenges need to be addressed.

