

## STRUCTURED CABLING: Market sLOWs DOWN

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Mass enterprise IT adoption has resulted in an increase in enterprise data. A number of developments in the Indian enterprise are driving the need for a robust cabling infrastructure. Organizational growth, use of converged networks, new enterprise applications, demand for data centers and network virtualization have only increased the importance of structured cabling solutions.

Indian Structured Cabling Market (2008–09) : Major Vendors*† Rs. 950 crore				
Tier 1	Tier 2	Tier 3	Tier 4	Others
AMP NetConnect (Tyco Electronics)	DIGILINK and Systimax Commscope	Molex, Reichle & De-Massari (R&M), and ADC Krone	Belden, and Panduit	Sterlite Technologies, DAX Networks, Nexans Cabling, TVSICS, Siemon, , Legrand, PDR, Clipsal, and Finolex

\*The vendors are placed in different tiers on the basis of their sales contribution to the overall revenues of the Indian SCS market in 2008–09  
 † Independent ADI MEDIA RESEARCH

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### Structure your Future

Network gear like switches, servers, and routers are upgraded once every few years and hardware components like RAM, hard disks, and motherboards are upgraded/replaced quite often. But cabling infrastructure is a vital component of the network that will outlive the rest of the information transport systems. Seventy percent of the network downtime is due to poor cabling. Hence, it is important for companies to choose the right solution.

**Shajan M. George, Technical Director-India, Reichle & De-Massari (R&M)** says, "Selections are long and sensitive processes that end with a purchasing action. Typically, purchasing decisions are valid when commodities are involved and unfortunately many consider cabling a commodity while it is not. Cabling is a system and therefore all elements must be evaluated with competence that generally doesn't belong to only one individual".

The quality concern applies to the entire value added chain of a cabling system'from the production to the installation to the operation and maintenance. A building is erected starting from fundamentals. Most of the time cabling is considered as last and sometime not even considered as part of IT. Structured cabling is the backbone of the information system, thus an enterprise must do a careful evaluation before finalising on a solution. A cabling solution must satisfy the needs of the enterprise. For the network solution to satisfy all customers' requirements, not only does the choice of products have to be right, but the cabling has to be

planned, installed, and operated in a qualified way too.

A solution must score high on the parameters of security and reliability. Also, it should comply with industry standards such as TIA/EIA and ISO. Another important thing to consider is that the solution must be scalable, so that it could be upgraded for additional speed or data needs. The solution should provide a zero bit error-free performance and must be capable to support minimum gigabyte throughput and future applications.

Cost is another guiding factor in choosing a solution, but it must be borne in mind that cost is very important but not the decisive one. First, selected cabling must satisfy the performance requirements; after all whatever the cost is always a cost.

## Current Trends

According to cabling manufacturers, the major turning points in the industry have been the progress in technology from fast ethernet to gigabit ethernet and more recently to 10 gigabit over copper. IT managers realize that the speed, performance, and manageability of networks are important factors

In terms of technology, Cat6 continued to rule the SCS market. Cat6A (STP) implementations were limited to datacenter projects especially in the network backbone. **K K Shetty, Director Sales, (India and SAARC), Tyco Electronics Corporation India Pvt. Ltd.** says, "The surprising pick up in Cat5A sales is attributed to the markets opening up in B and C Class cities. In terms of fiber while enterprises sales have not been very high they still contributed to about 8 percent to 10 percent of SCS business. One major change that we see in terms of fiber is in the telecom industry where Fiber to the Home is primed to become a reality".

The Cat 6A market is picking up because of high bandwidth requirements, especially in datacenters and enterprises where high-speed data transmission is required for mission-critical applications. **Subashini Prabhakar, Chief Technology Manager, Dax Networks** says, "The current cabling market shifted to Cat-6A on copper both UTP and STP versions. In fiber moved more on Single mode fiber with 'Zero Water Peak' with 10G capability and to support WDM". However, many small and medium enterprises in India still prefer to go with Cat 5e cables.

10G as a market segment is fast evolving in India and the acceptance of the technology is growing amongst the corporate. **Rajesh Kumar, Country Manager, Siemon** says, "Higher speed ethernet standard 10 gigabit ethernet, are creating an environment where internet protocol (IP) and the delivery of advanced IP services like voice over IP, IP videoconferencing and IP-based security are becoming common applications". This is a healthy sign where we are moving towards an integrated and converged network. There is a definite increase in the demand in Internet traffic. New applications coupled with the growth of Internet users are driving the need for increased bandwidth. One such technology that addresses this demand is 10 gb/s ethernet over structured copper cabling systems which can be seen in upcoming data centers/knowledge centers. One of the latest trends is the growth in the need for 10 gb/s cabling systems.

Another trend sees the cabling systems increasingly getting intelligent especially the ones deployed in the enterprise space as manpower and down time cost involved is higher as compared to initial cost. These systems provide for real-time management of the physical layer, which enables immediate troubleshooting of problems, if any, besides optimum utilization and efficiency and gives RoI to the management. The intelligent structured cabling is able to track IP-based devices such that the network manager can access, control, and manage them from one central location. This is more critical considering the distributed computing environments that we have today and the acute need to troubleshoot them remotely. There is a scarcity of network management staff and therefore remote access and management of devices is logical. For this,

use of an intelligent structured cabling system is a must. Besides this, there is a growing trend towards interoperability and providing higher security to the user as well.

### **Market Dynamics\***

AMP NetConnect (Tyco Electronics) clearly led the market with over 30 percent market share. Tyco Electronics dominated the high end market segment of the SCS market and also had significant presence in the mid end market segment.

DIGILINK and Systimax Commscope accounted for a combined market share of 35 percent (Tier 2). DIGILINK dominated the low end market segment by a significant margin. The company concentrated on the manufacturing, BFSI, PSU, education, government, and infrastructure verticals. Some of its major customers included Durgapur Steel Plant, Assam SWAN, Maharashtra SWAN, TATA Steel, Jharkhand Police, XLRI Jain Irrigation, Pantaloon, Naval Science, and Technology, and Anna University. DIGILINK recently demerged into Active Solutions and Passive Solutions. The strategy behind this was to come close to the end users and to suitably cater to distinct needs of the varying segments. The distributors and channel partners remain the same but their strategies differ for the two segments.

Molex, Reichle & De-Massari (R&M), and ADC Krone together accounted for Tier 3. Molex's target market spans across all major BFSI, PSUs, state and central government education, IT/ITes, and manufacturing. Recent project wins by Molex included HDFC Bank; QualComm; US Technologies; ICICI Bank; Reliance Industries; Bhillai Steel Plant; Euronet; Tata Capital; Adani Power; Pawan Hans; CG SWAN; Serco; West Inn Hotel; Vizag Steel Plant; Sutherland; IIT, Chennai; Anna University, Chennai; and Zenta, Chennai. Molex works with large Tier 1 and Tier 2 system integrations along with distributors.

R&M has three national wide distributors: TVS ICS, Vibgyor Netconnection, and Inflow Technologies. Some of R&M's major customers included Standard Chartered Bank, IBM, TechMahindra, and Bosch.

ADC Krone's major customers included TCS, CTS, Reliance ADA (Data Center solutions), Volkswagen (application of ADC Krone's LAN solutions), and HDFC Bank (Data Center). TCS Siruseri is the second largest IT/ITeS installation in the world after Microsoft Redmond. This installation will provide structured cabling facilities for 25k plus nodes. CTS's Kolkatta installation at BIPL is noted for applying Physical Layer Management Solutions.

Belden, and Panduit fell into Tier 4 in our bifurcation of major players into different tiers (on the basis of sales contribution). Belden's major revenues (70 percent) in the SCS market came from the large enterprise market segment, while the balance was accounted for by the small-medium enterprise market. The company had strong focus in the infrastructure vertical, projects in BFSI and IT/ITes verticals, and presence in the media, manufacturing, and education verticals.

Tier 5 included other vendors in the SCS market: Sterlite Technologies, DAX Networks, Nexans Cabling, TVSICS, Siemon, BNA Technology, Legrand, PDR, Clipsal, and Finolex. Dax Networks did similar business in the SCS market as it did in 2007-08. Some of its major customers include Suzlon (fiber backbone), Ennorcon (1.05 Fiber Backbone), and Railtel (Cat 6 and fiber backbone).

Nexans major customers include: Delhi Metro Rail Corporation, General Dynamics, General Cables, Barco, Spanish Embassy, HDFC, Allahabad Bank, HPCL, Cambridge Technologies, Mudra Communications, Greaves Cotton, SFO, and Rexam Pharma apart from many others. Nexans is also available through the DGS&D rate contract.

## Growth Drivers

**Sudha Jagadish, Chief Operating Officer, Dax Network** says, "Government, telecom, and SMB's are some of the key demanding verticals for structured cabling". As government is a major IT spender in India, major vendors are planning to enter this segment. Apart from this IT/BPO, BFSI, telecom, education, financial institutions, and healthcare are the key verticals that are driving the demand for cabling solutions. Further, with the opening up of FDI, new areas have widened for cabling vendors in retail and real estate.

**Isaac Martin, Sr. Marketing Specialist, Molex** says, "Infrastructure projects have been a major contributor for the cabling market. But, in the wake of the current global economic slowdown a lot of infrastructure projects are deferred". Although, the slowdown has affected the cabling market, but, there have been openings in other sectors. **D S Nagendra, General Manager-LAN, Nexans Singapore Pte Ltd** says, "Government is creating SWANS and data centers, BFSI's are increasing their reach and are creating more branches, railways and power sectors are increasingly spending on network infrastructure, and IT/ITeS have also seen expanding, though in a controlled manner. All these developments will contribute to the growth of the structured cabling market". **Debraj Dam, Business Head - Structured Cabling Systems, DIGILINK** adds, "Penetration of the internet and broadband in rural India and the increasing demand for data centers and network virtualization will propel the growth of the structured cabling market in India".

## Growth Inhibitors

The SCS business itself is now weighed down with continuous drop in copper prices at LME that has forced vendors to decrease the cable prices to pass the price benefit to the customer. As result the overall value of projects has gone down considerably. The downturn of the economy is now fostering fierce and aggressive competition in terms of pricing. The customers are in no hurry to buy products and being on tight cost reduction budgets, they are willing to assess and procure low cost products.

Apart from the price challenge and subsequent shrinkage of the overall market due to economic recession, the SCS industry continues to be facing the challenge of expertise or lack of it when it comes to qualified engineers. Proper training is highly critical for people who install SCS networks because quality of interconnections and the way cables are laid is directly proportional to quality of bandwidth that a network delivers. Poor connectorization results in less bandwidth delivery which slows down the speed of the network applications that run on it.

## The Road Ahead

Analyst predictions and independent polls indicate that 85-95 percent of new installations will be installed with CAT6. Since CAT6 link and channel requirements are backward compatible with CAT5e, it quite easy for customers to choose category 6 and supersede CAT5e in their networks. Intelligent cabling will reduce the cost of network ownership by solving issues like unplanned downtime, inefficient manual moves, additions and changes, redundant ports and inaccurate records. It will increase network management efficiency and network security considerably.

The fact remains that the cost of the electronic devices used with fiber systems hasn't decreased to the extent where fiber has become a relatively inexpensive alternative to copper. Copper continues to make progress in terms of performance, and this has left fiber a laggard where cost is concerned. Copper's 10G ASE-T supports 10 gigabit speeds. The dampener for copper cables is the rising price of its key raw material in the global metal markets. Hence, it wouldn't be untoward to expect an increase in the fiber content in enterprise cabling.

Also, we might see data center technologies gain strength space. It would be worthwhile to note that Hi-D cable management systems that reduce real-estate footprint for SCS would be very relevant in today's scenario for all verticals because they would help maximize real estate costs. Other trends that would continue to prevail would be high density plug & go, MPO, and MRJ21 connectors that also help maximize real-estate costs.

We would also see CAT-7 installations that use sheath sharing technology, through which four pairs can be used for multiple applications simultaneously. The need to provide flexibility to users for creating a work group will result in the use of pre-terminated fiber and Multiple Point Outlet (MPO). The implementation of intelligent infrastructure management systems will also see an upward trend.