



## STRUCTURED CABLING

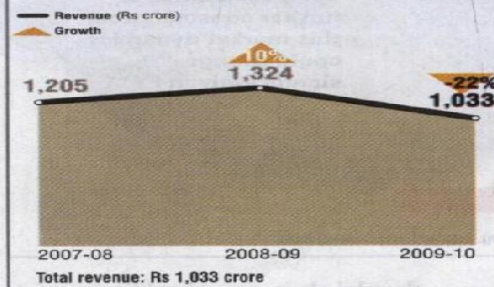
# The Good, the Bad.... and the Better?

The structured cabling market declined, but signs of recovery were visible in the latter half of the year. And a possible market consolidation in FY11

**T**he overall structured cabling market was not only dull, but saw a major decline, with most vendors blaming recession as the major cause. Other factors such as fluctuating copper prices on London Metal Exchange (LME), facility closures for some companies, and a dramatic decline in customer spending, specially from the IT and ITeS sectors, made it worse for the structured cabling vendors. There were mixed reactions from the industry. While some players continued to garner revenues in the second half of FY10, others were still struggling to cope up with the recessionary blues that started from the end of 2008. With the market segmented into commodity products (mainly Cat 5), mainstream products (Cat 6 and Cat 6A), and advanced products (Cat 7), the buying behavior also drastically changed in FY10 with most customers making strategies to cut costs wherever possible. The economic situation last year had forced organizations to cut down costs on all fronts including IT spends. However, an interesting trend seen in the industry was that organizations were shifting to intelligent cabling solutions to reduce costs while ensuring that performance is not affected.

The battle between fiber cabling

**The Indian Structured Cabling Market**



**Decline in spending by IT/BPO companies during recession as well as fluctuating copper prices led to the decline of the structured cabling market. The slowdown even forced some vendors to close their facilities**

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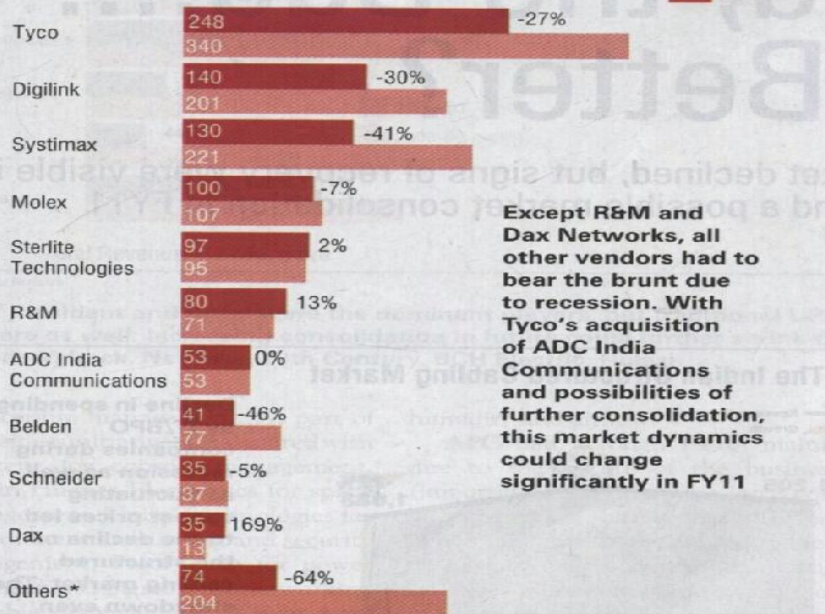
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and copper cabling continued in FY10. However as viewed by most of the vendors, fiber cabling is expected to be increasingly used in data center applications and remain the backbone mainstay for the enterprise's core network while copper cabling will continue to be the dominant cabling used in LAN cabling applications. With growth of data centers on the rise and newer technologies being adopted by enterprises, optimism and hope still remains among the vendors in this segment.

The big news of 2010 was, however, the acquisition of ADC India Communications (formerly Krone) by Tyco. This acquisition would certainly mean some tough

competition in FY11 among key vendors such as DIGILINK, SYSTIMAX, Molex, R&M, Belden and others. This year with Belkin also foraying into the structured cabling business, market condition looks more competitive and promising as well. Though a late entrant into the market most customers would like to see the value proposition being offered by the company. True, that structured cabling has been a backbone for a wide gamut of industries such as IT services, BPO, telecom, BFSI, manufacturing and automobile, however impact on these industries has directly affected the overall revenues of the structured cabling vendors.

**Structured Cabling Market**



**Except R&M and Dax Networks, all other vendors had to bear the brunt due to recession. With Tyco's acquisition of ADC India Communications and possibilities of further consolidation, this market dynamics could change significantly in FY11**

\*Others include Siemon, Panduit, Nexans Calbing, Legrand and Coming India

**Key Market Drivers**

Though structured cabling faced the heat during recession, however certain market dynamics that have evolved over time are bound to support the segment in a big way. Fiber is emerging as an important cabling option while on the other hand, most vendors are aggressively pushing their optical fiber cable products in the market as they see a spurt in demand. Added to it is the increased demand of bandwidth that will lead to fiber rollout. With the rollout of the UID project in India, a lot of structured cabling vendors are hopeful that the market will bounce back as a lot of data will be stored in data centers, for demographics and biometrics providing capabilities, and thrust within the data center market. US and European markets dominate

the global structured cabling systems market. However, the structured cabling business in Asia-Pacific (including Japan) is expected to be the fastest growing. This growth would be led by a host of factors such as greater demand for enhanced bandwidth, more adoption of greener technologies and increased incidence of Indian companies hosting mission critical applications such as ERP and CRM at remote locations, ie, third party data centers.

**Vendor Strategies**

Tyco continued to lead the segment in FY10 as well. However, the company was majorly impacted during the recessionary phase especially due to decline in customer spending from the IT/ITeS segment. The company saw a 27% decline y-o-y but bounced

back particularly in the second half with key customer wins such as Aegis, TCS, Accenture, Airports Authority of India (AAI), Oracle, and Birla Sun Life. While the data center business was relatively flat for Tyco, telecom saw some growth and the company expects this vertical to continue to do well, now with the acquisition of ADC India Communications, sprucing up their broadband offerings. The mainstream product Cat 6 accounted for 80% of the overall business, while the remaining revenues came from Cat 5 and Cat 6(A). D-Link continued to do active business on networking components after the demerger, Smartlink's entry into the same domain posed some competition for the company. According to the company, the first half of FY10 was a total disaster, however, things shaped up during the second half with a handful of customer wins specially for data center projects. During this period, the company announced an enhanced distribution structure by appointing two national distributors—Ingram Micro and Redington.

CommScope SYSTIMAX's overall sales completely went south, blaming recession to be the cause of the disaster. However, the company did focus a lot on newer technologies such as LTE and WiMAX. The company, in order to preserve the financial flexibility during recession, had to take drastic measures such as workforce reductions, facility closures, salary freezes, and bonus programs suspensions due to decline in customer spending. Molex, like others, bore the brunt in FY10 due to the slowdown, especially during the first half. However, the company bounced back in the second half by introducing a new suite of APLM solutions. This solution found several customers for the company last year including HDFC, Qualcomm, Sutherland, ICICI, Reliance, Adani Power, and BNP Paribas. Interestingly, the company's focus across different verticals such as banking, energy

utility sector, and manufacturing led to a decent performance in the last two quarters of FY10. Sterlite registered a considerable growth with some key wins in data center projects and verticals such as banking and telecom.

Data center projects from Bharti, Tech Mahindra, Toyota, Renault Nissan, Bosch and HSBC helped R&M in FY10, at a time when the structured cabling market was predominantly flat. Shielded technology continued to be the major thrust area compared to the UTP business; and Cat 6 and 6A continued to be its mainstream product choices. Vertical-wise, IT/BPO contributed the major chunk of revenues, followed by hospitality and finance sector. ADC India signed up an agreement with Fidelity for channel distribution in Chennai. The company also focused on its channel strategy last year adding fourteen channel partners for their expansion in tier-2 cities. The name change from ADC Krone to ADC India Communications also did not change their fortunes as the erratic behavior of copper further compounded the matter. It won the phase II project for a large software development facility of TCS in Chennai valued at Rs 17.5 crore, as well as the wireless coverage for both Delhi and Mumbai international airports. Belden experienced a historic downturn as a result of the global economic crisis in 2009, however their decision was to take direct, aggressive restructuring actions to significantly improve cost structure. There were also some major changes in senior leadership team at Belden with Dhrupad Trivedi and Christoph Gusenleitner joining the board, to lead Wireless and EMEA segments, respectively.

With a focus on energy efficiency, Schneider Electric focused on pushing its green products in the last financial year. However, it did face heat during a tough time. It announced EcoStruxure Active Architecture for integrated energy management solutions as part

of their green initiatives. Its focus on data centers, infrastructure and buildings continued to be a major focus. Dax Networks continued its focus on verticals like government, defense, education, and corporate, where government continued to be their main focus in FY10 also.

### Technological Trends and Standards

Vendors have already started propagating fiber-to-the x (including FTTN, FTTH, FTTC, FTIK) as the next big wave in the industry that will promote the usage of optical

media transmission characteristics, bandwidth requirements and length limitations across various cabling types.

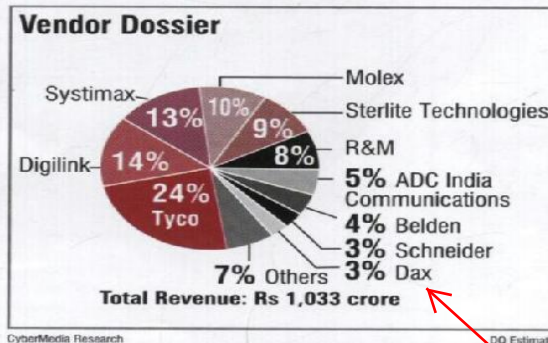
10 Gb/s Ethernet will be expected to operate over a minimum specified class E U/UTP channel length of 55m. The ability of a U/UTP channel to meet length objectives beyond 55m will hinge on two factors. The first being the performance verification of electrical parameters up to 500 MHz. The second factor will hinge on what levels of applicable DSP cancellation can be achieved. The inability to meet either of these two factors

will impact the physical length over which 10 Gb/s Ethernet can operate. The cabling industry believes both these issues will be addressed and U/UTP cabling systems for category 6 will support 100 m applications. High-performance computing (HPC) infrastructure and operations' professionals need to strike a chord between sound monetary decision-making and continuous operational improvements. It is believed that so far, 10 Gb Ethernet has been a high-end luxury for

environments that want maximum performance regardless of cost, however that trend is fast changing.

The per-port pricing gap between 10GbE and alternate network options is narrowing rapidly as more vendors increase the competitive pressure on pricing for related components. Enterprises across a wide range of industries have begun leveraging HPC for product design and simulation, data analysis and other highly compute intensive applications that were previously beyond the reach of IT budgets, with technology maturing and costs declining.

Green Ethernet is also becoming



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**The market leader Tyco could become bigger following the acquisition of ADC; the market is awaiting further consolidation that could mean the end of a few more vendors**

fiber replacing all or part of the usual metal local loop used for the last mile telecommunication. Some market research data indicates an increased demand in Internet traffic. New applications coupled with the growth of Internet users is driving the need for increased bandwidth. One such technology that will address this demand is 10 Gb/s Ethernet over structured copper cabling systems. Analysts believe that the copper media infrastructure that supports 10 Gb/s Ethernet has to be characterized. This characterization will involve an understanding of key areas such as review of the structured cabling

**How Distance Impacts Infrastructure**

Type	Max Distance	Application
Category 5e	100 m	Home, office, and data centers
Category 6	100 m	
Category 6A	100 m	
11 Meg Wireless-802.11b	45 m	
54 Meg Wireless-802.11g	45 m	
55 Meg Wireless - 802.11n	90 m	
WiMax	1 km	Last mile, floor-to-floor, long distance
SM Fiber	1 km	
MM Fiber (62.5)	300 m	
MM fiber (50)	300/600 m	
Coax/RG 59 Type	300 m	

a buzzword with the Institute of Electrical and Electronics Engineers (IEEE) assigning taskforce to investigate energy efficiency in networking hardware. D-Link has introduced its own technology to the market to meet a demand for 'green networking' ahead of the ratification. D-Link also introduced the Die-cast aluminum high density premium patch panel that saves rack space. Another trend was the rapid movement of blade server markets towards next generation designs that use 10 Gbps serial links based on 10GBASE-KR standard and which reduces the number of backplane traces.

Continual improvements in the technology of data transmission over copper wire virtually guarantees that copper will remain the preferred medium for office networks in the foreseeable future. Installations using Category 6A copper, in particular, demonstrate the capacity to satisfy high-demand data speed requirements in the majority of horizontal office-environment applications, as well as in many network 'backbone' applications. Category 6A (or Augmented Category 6) operates at frequencies up to 500 MHz, which is twice that of Cat 6. Category 6A can support 10 Gb/s data rates (over 10GBASE-T Ethernet) up to a maximum distance of 100 m. Category

6A cable is specifically designed to avoid crosstalk interference between cables, a technical hurdle that had to be overcome in achieving 10G data rates. Category 6A uses larger-diameter conductors, lower packing density and tighter twists. In some cable designs, foil shields are utilized to achieve the necessary performance. The result is less loss of signal strength at high frequencies, significantly better crosstalk isolation between cables and improved heat dissipation. Information technology managers acknowledge that 10 Gb/s Ethernet (or 10GE) over copper exceeds requirements for the majority of office environments. Copper wired networks are generally preferred over wireless networks because copper provides greater security, and wireless has limitations in a multi-user networks. In local networks, copper is also preferred over fiber optic cable because total network costs are less expensive when copper is used. Another advantage of copper is its ability to carry low levels of power; enough to power security cameras, card readers or other low-power devices. Category 6A is ideal for large file transfers and installing multiple applications through the network simultaneously. It is also capable of supporting high-end security applications and distributing digital audio and video.

There is a considerable motivation for service providers to migrate their networks to GPON. The technology, particularly in video is making huge strides in the home entertainment segment including HDTV, gaming, teleconferencing, and other high bandwidth applications. Today's and tomorrow's enhanced services, interoperability requirements, use of enhancement bands, and the promise of higher split ratios and increased capacity are demanding the service providers to use GPON as the best upgradation path. While service providers strive to meet the challenges of upgrading their FTTP networks to GPON, vendors should seek to make a migration too.

**Market Outlook**

The Indian structured cabling market is expected to grow by 15-20% in FY11. Apart from the government and telecom verticals which did considerably well last year, most other verticals saw a major dip in revenues. This year analysts predict that verticals such as IT/ITeS and BFSI, manufacturing and education will go strong. Added to that would be the data center business which will continue to attract investment and most vendors would be able to garner revenues. Services such as cloud, server virtualization, 10 GbE adoption and fiber in both the backbone and in horizontal cabling will show the light to several vendors in this space. The challenge, however, remains on the manpower side and has continued to bug the industry for a long time. However, training programs and attracting talent in this industry would help vendors to achieve their goals for FY11. Moreover, the need for energy efficiency and reducing costs would be a major priority for the enterprises and therefore the push for 'green' products would continue by the vendors in this space.

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