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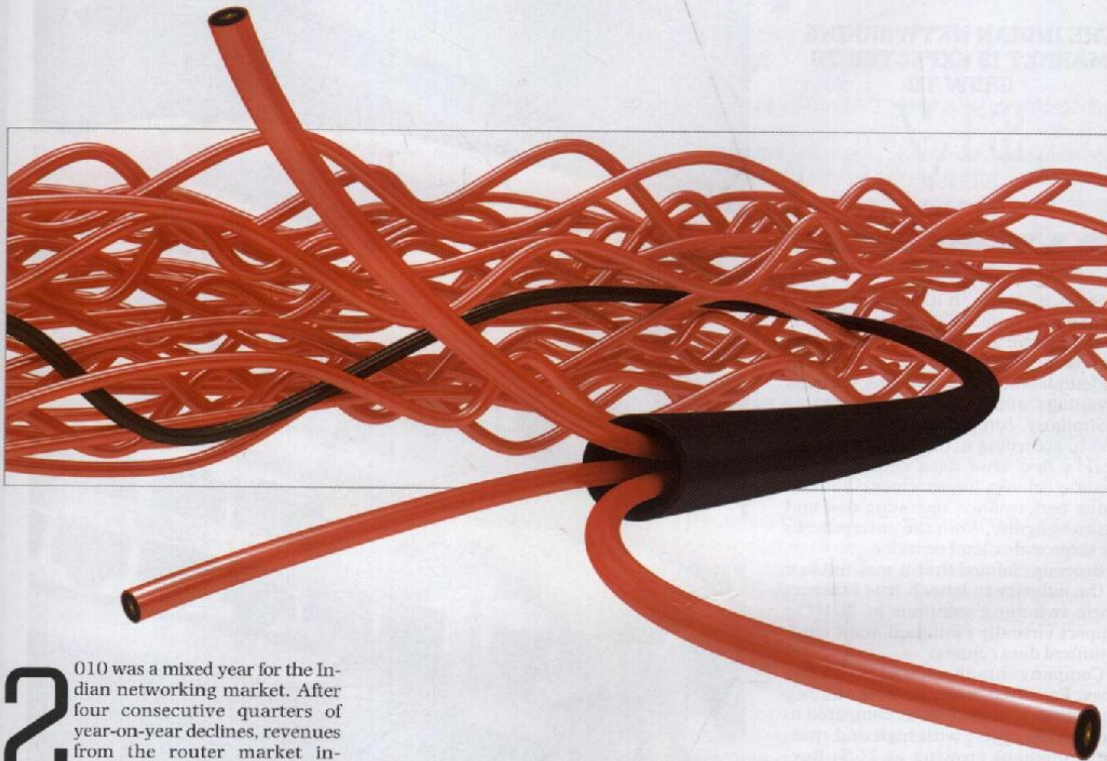
NETWORKING

STILL IN TRANSITION

The recessionary effects were felt as vendors failed to bag big ticket deals. However, 2011 promises a better scenario for vendors as India is amongst a handful of countries witnessing high growth rates and mainstream acceptance of technologies like the Cloud and virtualization.

This could fuel networking spend.

BY VENKATESH GANESH



2010 was a mixed year for the Indian networking market. After four consecutive quarters of year-on-year declines, revenues from the router market increased 15.1% in Q1 2010, as compared to the first quarter of 2009. This came as music to the makers of networking gear who were bogged down for months due to dismal global macroeconomic conditions. According to Nareshchandra Singh, Principal Research Analyst, Gartner, 2009 was a bad year for the enterprise networking industry. India mirrored global trends as companies from across verticals preferred to put projects on hold. While Gartner and other analysts did not undertake a study in 2010, the script remained the same.

According to a recent study by Springboard Research, the market for enterprise networking equipment in India is estimated to grow from \$1 billion in 2008 to \$1.7 billion by 2012.

Data from Springboard Research estimated that the market for enterprise networking equipment in India, was around \$1.2 billion in 2009 as against \$1 billion

in 2008. This is expected to grow to \$1.7 billion by 2012. Research firm Frost and Sullivan pegged the Indian data networking market that includes LAN and WAN data networking components such as core and access routers, switches, WLAN routers and access points at approximately \$1 billion in 2009.

Cisco continues to lead in core networking technologies. According to data from IDC, Cisco has a 72.2% market share in routers and 66% in switches.

Tough market conditions

Despite a flat market in the last couple of years, as enterprises pulled back their spends either for upgrading or replenishing networking equipment, companies and vendors are more bullish about 2011. "The networking market in India is poised

for strong growth in the coming years," forecasted Avinash Purwar, Senior VP, Borderless Network, Cisco.

Agreed Sudha Jagadish, CEO, Dax Networks. "The router market is expected to grow in the coming years because of a seemingly insurmountable amount of data, video, and voice traffic that is hitting networks. Service providers are likely to steer future growth providing a huge opportunity for the global router market, as routers are an essential part of next-generation networks."

What Jagdish pointed out is a view endorsed by almost every single player in the networking market. The biggies in 2010, especially Cisco and Juniper in a span of few days, announced new offerings that required a longer timeframe in terms of R&D effort.

**THE INDIAN NETWORKING
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GROW TO**

\$1.7

**BILLION
BY 2012**

Cisco, in line with its global strategy rolled out its Unified Fabric, Unified Computing System and Unified Network Services technology portfolios which form the foundation of its data center business advantage architectural framework.

Similarly, Juniper unveiled QFabric, which, according to the company is the world's first true data center fabric. QFabric delivers improvements in data center performance, operating cost and business agility, from the enterprise to the large scale Cloud provider.

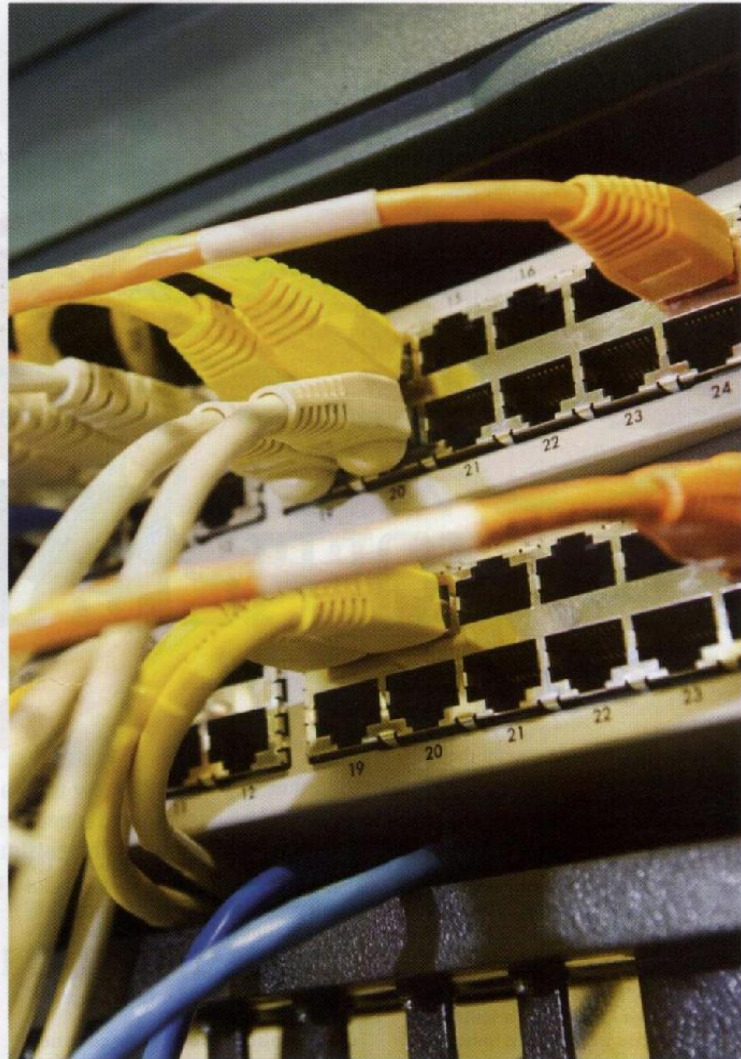
Brocade claimed that it was the first in the industry to launch true Ethernet fabric switching solutions in 2010 to support virtually optimized and Cloud-optimized data centers.

Company numbers told a similar story. For Cisco, revenue from routing equipment was up 13% as compared to the previous year, with high-end routing equipment growing at 16%. Revenues from mid and low end routing were up 7 and 8% respectively.

John Chambers, Cisco's CEO, said in an analyst call that the company's revenues would grow in the range of 9-12% in 2011. Juniper, with a lower turnover as compared to Cisco, reported revenue growth of 23% year-on-year and the company felt that its addressable market would grow in the range of 12-18% and that it expected to grow faster than that.

The recession in global markets took its toll on the Indian networking equipment market. IT spends in the telecom sector saw a de-growth of 1% in 2009 and grew by 13% in 2010, according to Gartner. Historically, the telecom sector has always led on networking spends. Most companies spent on small upgrades in the year and refrained from making large investments on their networks.

"Sales of core routers declined significantly in 2009 due to the recession as service providers reduced spends to min-



imum levels in order to sustain traffic growth and did not embark on major projects," said Shin Umeda, Vice President Dell'Oro Group, Inc. Agreed Lavanya Palani Batch, Senior Research Analyst, ICT Practice, South Asia & Middle East, Frost and Sullivan. "In 2010, this market was affected by the economic recession."

According to Shekar Nair, CEO, Elina Networks, "This market will continue to remain flat due to integration and optimization of both cost and capability.

Routing by itself will not see high growth except in ISP networks since many integrated devices which do both routing and security will be available as alternate options."

Bullish in 2011

All categories in the networking market are poised for growth in India, which mirrors the trends seen in other BRIC countries. Take the case of the routing and switching market, which still forms

the bulk of the networking expenditure. Research firm Ovum has projected an upbeat long-term forecast for optical networking equipment driven by the constant need for bandwidth and it expects this market to reach \$20 billion by 2015. According to a Morgan Stanley CIO survey, 35% of IT professionals said that they expected to increase LAN switching investments in 2011. Dell'Oro estimated that the total addressable switching, routing, security, wireless and WAN optimization market was worth \$40 billion in the next three years, growing at a 12% CAGR.

Similarly, a recent Infonetics report pointed out that the router market was expected to grow by 12%, this year. "We are bullish on the Indian market for our solutions across the spectrum," said Sridhar Sarathy, VP, India operations, Juniper Networks.

According to Avinash Purwar, Senior VP, Borderless Network, Cisco, wireless for last-mile connectivity in rural India and unwiring cities has been a constant focus and is a key factor driving the growth of the networking market. He added that the advent of technologies like 3G and WiMax, would be other growth drivers.

"WAN optimization will continue to be a fundamental part of modern IT architectures as Indian enterprises start rolling them out," said Robert Healey, Marketing Evangelist, APAC & Japan, Riverbed Technology. "The routing and switching market that remained flat in the last couple of years would see growth fueled by technologies such as Cloud computing and virtualization," he added. "High-end switching in data centers will drive the market," averred Nair.

Another trend in 2010 was the convergence of Ethernet and Fiber Channel. Companies started migrating to 10GbE from multiple 1 GbE connections. "We saw growth in demand for our 10 GbE fixed switches and chassis-based routers and switches. This is the trend that will dominate in 2011 and in the years ahead," said Rajesh Kaul, Regional Sales Director, Brocade India.

Kaul's confidence stems from the fact that Ethernet infrastructure is getting commoditized. Also, the necessity for building future-proof network infrastructure while protecting existing technologies took precedence as organizations looked to simplify tasks such as storing, managing and maintaining their data and also keeping an eye on capital and operating expenditures. "The network

integration market in India is expected to boom this year as more organizations are going in for networking their businesses," said Jagadish.

Increased spends with 3G

Even though late, 3G is music to the ears of networking players. According to Evaluate's estimates, there is a likelihood of 395 million 3G-capable handsets in India by 2013. Add to that, a 680 million subscriber base and with it increased networking needs. With telcos rolling out 3G, there is a push to upgrade their existing infrastructure that is built for 2G needs. "Telcos will have to look at a unified platform whether it is for billing of fixed, pre-paid or post paid lines, providing them different applications such as video services from a single platform," said Sarathy.

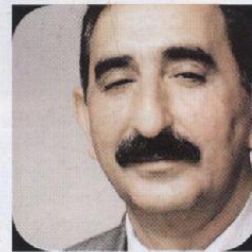
Shiv Putcha, Principal Analyst, Emerging Markets, Ovum, said, "Telcos would not upgrade their infrastructure overnight but will have to look at common billing platforms and prioritizing network traffic amongst other things that would necessitate additional networking spends."

"Network performance is becoming important as organizations are increasingly considering shifting their applications and data to the Cloud," felt Shailendra Bodoni, COO, Datacraft India.

Purwar added that, in today's globalized economy, IT managers were under pressure to make the network available to anyone, anywhere, at any time and on any device in a secure and reliable manner. While all this would increase the demand on networks, CIOs were concerned about uptime issues in the event of an upgrade.

Sarathy pointed out that upgrades could be done on the fly without disrupting the network at any point in time.

The killer app is going to be broadband Internet access. "Mobile Internet access in India is already more than 3x that of fixed, in large part due to the relatively high cost and limited availability of fixed broadband. GPRS networks are extremely slow and therefore HSPA, which will offer much faster data download speeds, will be attractive," said Windsor Holden, Principal Analyst, Juniper Research. However, the caveat here is that the network operators must ensure that 3G is marketed with a substantial range of relatively low cost 3G



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RAJESH KAUL,
REGIONAL SALES DIRECTOR, BROCADE INDIA

handsets, he added.

With falling ARPUs, Indian telcos would be under pressure this year to boost their earnings with 3G offerings but, on the other end, they would be faced with greater CAPEX in order to upgrade existing networks. Analysts and industry watchers reckoned that the Cloud could come to the rescue. "Indian telcos can opt for the first gen of Cloud services from whom other telcos the world over can learn," said Klaus Oestermann, Group VP and GM, Networking and Cloud Product Group, Citrix.

Government spending gives a boost

With the global economy in turmoil, most governments are stepping on the gas when it comes to spending on technology-related services. India has witnessed government spends in areas such as education, citizen services and the digitization of existing records.

In the recently announced budget, the emphasis was largely on bridging the



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SUDHA JAGADISH,
CEO,
DAX NETWORKS



THE INDIAN GOVERNMENT IS FOCUSING ON CONNECTING DIFFERENT DEPARTMENTS AND DISTRICT HEADQUARTERS TO RURAL PANCHAYATS

ANAND C. MEHTA,
VP MARKETING,
DIGILINK AND DIGISOL

digital divide through the use of IT and technology. "The plan to build the national knowledge network to connect 1,500 institutions of higher learning and research through an optical fiber backbone by March 2012 and increased allocation through the Bharat Nirman program to provide rural broadband connectivity to all 2,50,000 panchayats in the country in three years should bode well for more inclusive and sustained growth," said Kamlesh Bhatia, Research Director at Gartner.

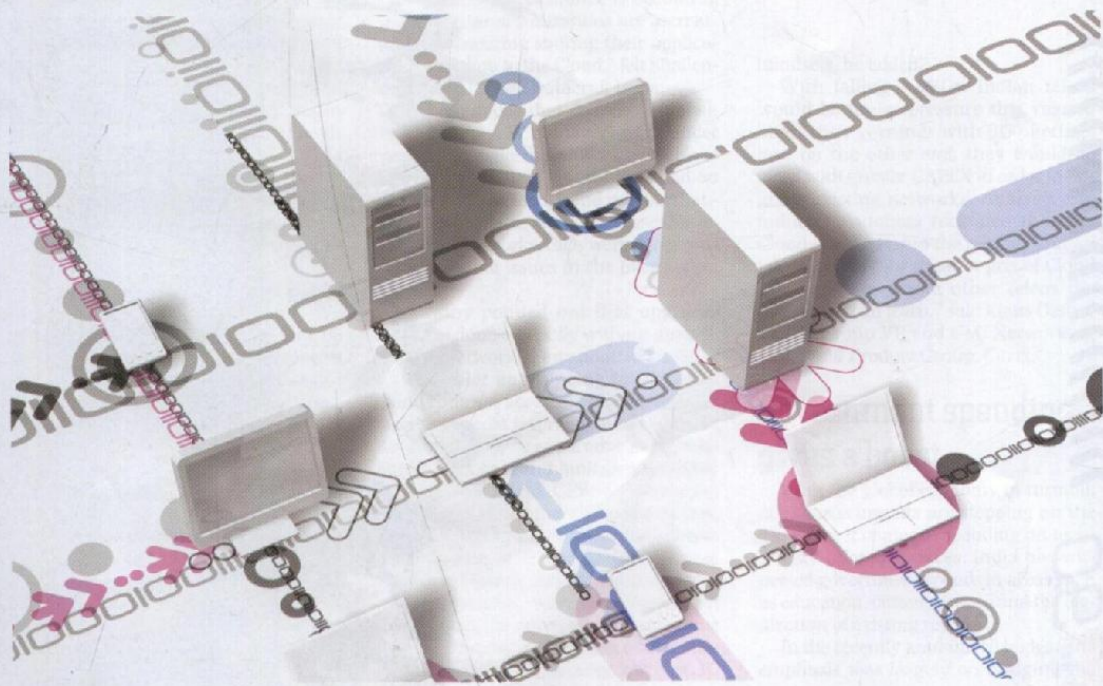
According to Purwar, all these initiatives will lead to an increased demand for networking products. "The Indian government is focusing on connecting different departments and district headquarters to rural panchayats," said Anand C. Mehta, VP, Marketing, Digilink and Digisol. "This year looks promising as the government is taking steps towards putting its basic IT in place for which network integration is a key enabler," said Jagadish.

The government will continue to

drive networking needs in India, said Nair.

There has been a considerable impetus towards infrastructure investment from entities such as the Indian government, said Batcha.

The Gujarat government, apart from a state portal, has connected seven districts on 8 Mbps and 18 districts on 4 Mbps to the state center at Gandhinagar using leased circuits provided by BSNL, Reliance and Tata Tele Services. Further, 225 Talukas have been connected to 26



district headquarters on leased circuits. Also, departmental offices at district locations and offices at talukas have been connected to GSWAN and more than 3,600 district and taluka level. GoG offices have been connected. Recently, CM Narendra Modi launched an IP-based video conferencing between various GoG offices. "Due to the technological initiatives, the state succeeded in bringing corruption under check and consequently increasing its tax revenues through the effective usage of computers and other electronic devices at ten remote interstate border checkposts," said Ravi Saxena, additional Chief Secretary, Government of Gujarat.

Similar initiatives are being taken in other states like Karnataka and Andhra Pradesh and networking vendors are hoping to cash in on government spends in India.

Other trends

The industry is seeing an uptake of 802.11n wireless networks with the ability to create a seamless working environment by combining the mobility of wireless with the performance of wired networks. "For backbone connectivity, network engineers are getting interested in 40G and 100G, but 10G still remains the preferred choice," said Mehta. He added that 802.11n was gaining acceptance. Also, green technologies such as virtualized data centers were being looked at, said Purwar. He went on to add that enterprises were looking at extending the benefits of virtualization technologies beyond the data center and achieving greater cost savings through network virtualization technologies.

RoI is the most important metric when it comes to IT implementations. "Growing network strain caused by the growth of bandwidth intensive applications will drive enterprises to invest in solutions that ensure improved productivity at low costs. Despite a slight uptick in IT budgets, RoI will be a critical component of IT purchasing decisions," averred Healey.

Also, reliance on WANs would continue to grow as the adoption of business applications including collaborative and rich media (video, VoIP etc.) tools and Cloud computing increased. "The effect of mobility will be felt in 2011 across all aspects of IT, from the enterprise LAN to the data center, spurring an uptake in virtualization of storage, applications and Cloud computing," said Kaul.

With mobility and next gen collabo-

ration acquiring a new meaning, access to enterprise services from devices such as smartphones, laptops etc. would, in turn, demand a network that can offer higher performance. "With the development of sophisticated online collaborative tools, IT organizations will have to be ready to patch their users onto it or similar collaborative tools and that would demand a network-readiness different from the current one," said Shailendra Badoni, COO, Datacraft India. According to Purwar, usage of collaboration technologies are moving from intra-company to inter company and the architecture supporting this shift is based on the network. "It is no longer about standalone applications such as videoconferencing or smart applications but rather how effectively it is able to integrate all of these applications," he added.

For others like Dax, there is a huge opportunity in the Indian switching market as prices have started coming down. "We are seeing deployment in enterprise data centers since the raw bandwidth offered by switches is unprecedented and it offers an extra edge," said Jagadish. Others see opportunities in server virtualization. "According to our estimates, only 10% of the server virtualization market has been tapped in India and there is a huge opportunity for companies like us in the SME sector," said Healey.

The market is also in an early stage of getting segmented. Players like Cisco, Juniper and Brocade are vying for the lucrative end of the networking deals and entry level and essential networking products like low-end switches and routers are being taken over by Huawei, ZTE and others. "Huawei and ZTE have products that compete with the traditional vendors in the core routing market," said Umeda. He added that vendors such as Cisco, Juniper, and Alcatel-Lucent viewed the Chinese manufacturers as a long term threat. "Market opportunity and the wallet is being shared with players such as Huawei and ZTE and some of the traditional players do see it as a threat and are forced to innovate quicker," said Nair.

A 2010 ranking of the world's most innovative companies by FastCompany.com listed Huawei at number 5, ahead of Cisco which was at number 17 and is clearly indicative of Huawei's ambitions. However, according to analysts, neither Huawei nor ZTE have won significant market share with the top tier service providers outside of the Chinese



TELCOS WILL HAVE TO LOOK AT A UNIFIED PLATFORM WHETHER IT IS FOR BILLING OF FIXED, PRE-PAID OR POST PAID LINES OR FOR PROVIDING THEM WITH DIFFERENT APPLICATIONS SUCH AS VIDEO SERVICES FROM A SINGLE PLATFORM

SRIVIDHAR SARATHY,
 VP INDIA OPERATIONS,
 JUNIPER NETWORKS

market. In India, Rcom recently signed an MoU with China Development Bank that covers financing of up to \$600 million towards equipment and services to be procured from Chinese vendors Huawei and ZTE.

To counter all these threats, Cisco is pushing ASR 9000 edge routers, which grew 200% globally in 2010. Video will be a key player and Cisco estimates that 91% of Internet traffic will consist of video by 2013, and overall IP traffic will grow 40% per year.

Networking vendors are hoping that 2011 will bring them better cheer than previous years. However, challenging market conditions confront them when it comes to selling their wares to enterprise customers. With the tax holiday for IT companies in STPI and SEZ coming to an end, mid-sized IT/ITES companies will be under pressure when it comes to IT spends.

Vendors meanwhile are bullish that with the refresh cycle starting, Indian companies will start spending. Time will tell.

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