

# Changing Dynamics

Enterprises opting for niche operators to manage complex network needs

As the networking needs of large enterprises have grown in magnitude and complexity, new solutions are being demanded. In this forum, various technology and equipment companies discuss these new trends and the hurdles in the way...

**How have the connectivity needs of large enterprises changed in the last few years? How are they expected to evolve over the next few years?**

## Dhananjay Ganjoo

It's not all about communication any more. Now it's about "collaboration". Large enterprise customers now require instant collaboration tools amongst their employees. Collaboration is changing the needs of enterprises, driving them to deploy converged infrastructure to carry triple-play applications (voice, video and data). Enterprises that were initially using two discrete networks, viz. voice and data, are now moving to converged networks, putting data and voice together. The next step in this evolution is to get multimedia applications on the same infrastructure.

## Java Girdhar

Just as service provider networks in India have grown over the last five to seven years, large enterprises have also grown. If you look at infrastructure, it has grown tremendously in large enterprises. Moreover, the level of awareness has spread to small and medium businesses as well. This has allowed them to understand the importance of the level of connectivity they need in the information exchange process. So, from a change perspective, we see changes that have happened from applications that were very basic in nature earlier. In addition, the level of complexity has grown in the level of applications because of rising demand from large enterprise users. At the same time, with multiple devices being introduced in the market, the way you use these devices puts pressure on the bandwidth available with the enterprise.

Also, there are various technologies that ride over such infrastructure, such as VoIP. Another change we have seen is the way networks are being built in the LAN environment, with newer technologies being brought in, especially in the wireless arena, such as Wi-Max and Wi-Fi.

## Sudhir Narang

The advent of the internet has changed the way business is done globally. Today, enterprises are relying on the internet to exchange information, improve processes and communicate, as it reduces costs and drives greater efficiencies. A study has shown that Indian companies spend less than 1 per cent of their total revenues on IT, whereas Fortune 500 companies spend about 8 per cent of their revenues on IT. Five years ago such a statistic didn't matter because Indian companies were not competing globally. We had a closed economy where productivity was not paramount. Competition did not exist and product quality was not given much importance. Faced with intense global competition, the domestic Indian industry has realised the importance of investing in internet and IT infrastructure to adapt quickly to rapidly shifting market and consumer dynamics.

Indian enterprises are increasingly adopting latest network-

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**“More and more large enterprises are evolving from a build-your-own network to a let-it-be-managed network. There is an increasing shift towards managed services.”** Java Girdhar

ing and communication technologies in more and more parts of their business processes such as communications, customer relationship management, supply chain, billing, etc. to drive down costs and improve productivity. In fact, this is making their networks more complex, and enterprises have already started looking at managed services seriously where they outsource their communication and connectivity needs to service providers.

From a technology perspective, Indian enterprises are deploying the latest technologies as they don't have any legacy infrastructure issues in most cases.

According to a New York-based Access Markets International report, 20,500 Indian enterprises invested over \$596 million in various kinds of telecommunications over the course of last year alone. This rapid pace of adoption will only grow further over the next few years.

### **Alpesh Sarvaiya**

The needs of large enterprises have changed according to the evolving business models, fast-changing technology and user expectations. The workforce is now mobile, manufacturing/sourcing is geographically spread, supply chains are competing everywhere and customers want a choice of channel/location to buy from. Information is sought by everyone, viz. within the enterprise (ERP, HR, payroll, CRM, etc.), by suppliers for applications like e-auctions and payment dues, government and statutory bodies for electronic data exchange, payment of duties/taxes/levies, etc. and consumers/customers to know their membership levels with the enterprise they buy from. CIOs face a challenge in facilitating these requirements; some are even required to create business models/sales channels by leveraging the technology/telecom solutions available.

As to how enterprises will evolve over the next few years:

- They will encourage people to work from home;
- Customers will get access to buying, service support/assistance (onsite or remote) on a 24x7 basis;
- Business processes will be digitised;
- Integrated corporate applications will replace standalone applications;
- Unified communications will be for real, with interoperable devices;
- Information systems will have to be highly secured, available and cost effective.

The implications for applications and CIOs are:

- The vision of “unified” communications can now become very real and even more practical as voice will also be data, and all telephony features and functions will be provided through software on standard network servers and communication device clients, using open source features;
- Migration from legacy and hybrid architectures to the new IP

infrastructure environment to exploit the benefits of converged communications that end-users will appreciate. This is going to take careful planning, time and money;

- Person-to-person communications must be seamless and viewed multimodally at the application interface level, where the individual user is not tied to a geographic location, and where the modality of any contact is dynamically flexible and based upon the availability, devices and circumstances of the communicating parties.

**How have equipment and technology vendors responded to these needs? Are these needs being met effectively?**

### **Dhananjay Ganjoo**

Technology vendors are leading the curve in providing next-generation application-based products to meet the needs of the changing enterprise. The focus of vendors has moved away from providing just hardware to providing application-oriented solutions which improve productivity and also provide a very cost-effective solution.

### **Java Girdhar**

As far as Juniper is concerned, the company was focused primarily in the service provider arena. At the end of the day, the service provider caters to the enterprise at large. So the enterprise being a customer of our customer, indirectly also becomes our customer. When we talk about the way enterprises are evolving, with all their complex needs and growth in infrastructure, their dependence from an MIS perspective is growing on very large service providers. These service providers are building complex backbones, which, though were not accepted as proven, trusted, secure or assured in the past, are now being seen as secured infrastructure. This is again because people have understood that the technologies driving this infrastructure are basically providing assured delivery. Due to this, more and more large enterprises are evolving from a build-your-own network to a let-it-be-managed network. So there is an increasing shift towards managed services.

### **Sudhir Narang**

Equipment and technology vendors, on their part, are heavily involved in the process of creating newer and better technology. Cisco is a pioneer in IP products/technologies and has been propagating it for years now. A few years ago, Cisco made a conscious effort to go beyond its core foundation products such as routers and switches to advanced networking technologies to enable its customers to derive even greater value from their network assets. While we continued to consolidate our position in the foundation technology areas of routing and switching, we also identified IP telephony, wireless, network security, storage and optical as billion-dollar market opportunities each and developed products/solutions in them. Today, we are a leader in most of these areas and are enabling enterprises and service providers to leverage the power of the network to communicate and connect.

### **Alpesh Sarvaiya**

Equipment and technology vendors are coming out with technologies and solutions that integrate voice and data in a single

solution with carrier-class reliability and a high level of security and availability. To meet the changing needs of enterprises, suppliers must be able to offer a strong convergence product line; e-business applications such as IP telephony and integrated contact centres; a cost-effective business model leveraging business partner expertise; and access to well-established carriers. Most of the solutions are almost there but adoption would also depend on the extent the users are educated.

For connectivity – broadband products available at affordable prices (wireless, copper-based and coaxial-based unified communication solutions). Corporate applications are web enabled with security features.

Productivity measurement and enhancement solutions – workforce management is available.

CIOs and service providers are more flexible and adaptive while serving users. Telecom is being leveraged to the fullest, for example, for airline ticket booking on SMS, internet banking and SMS banking, corporate websites are getting upgraded from an information repository to an interactive communication channel. Most of the needs are being met but with more integration of domain-specific requirements into the solutions being offered, the acceptability of the solution by enterprises should be on a higher level in the coming years.

**What, in your view, are the most promising technologies that large enterprises should be paying more attention to?**

### Dhananjay Ganjoo

When we think of communications, we must think more broadly than the home telephone, the cellphone, and the internet. It is evolving to include applications such as music, movies, programming and advertising – all of these reach us through a number of “networks”, in addition to traditional telecommunications networks. Each of these networks is essentially independent. They were built for mass adoption based on a single-purpose functionality. However, we are now in the midst of convergence, a trend that will see a merging of information and ultimately a blurring of content and of the distinct networks of today. This transformation is driven by changes in end-user needs and demands in terms of content, location and services. New technology such as SIP (session initiation protocol) is allowing us to adapt to these needs.

- For content, we are moving from single or point applications to multimedia.
- For location, we want to get away from the constraints of being in a fixed location to having freedom of mobility; and
- For services, people are no longer happy with generic services; there is a shift to personalised services that adapt to the individual.

This transformation will result in high value, adaptive multimedia, mobility and personalised services across the enterprise.

**“Enterprises need to look at the cost of managing their own network, which is becoming increasingly more complex. The advent of managed services addresses this.”** Sudhir Narang

### Java Girdhar

Some of the biggest challenges with such growth is the complexity of applications and reaching these applications to devices based on requests made both through the transport and the traffic-processing mechanism is one area. That is basically what enterprises are concentrating on. But if you look at the building of these technologies, they are looking at VoIP, at more wireless and possible integration of all of these in a convergent mode, in a reduced capex environment. So they are now looking at technologies that provide for just incremental capex but do not create complexities in the opex or operations as such. The opex also has to be optimised. The pure focus is on wireless, be it from the Wi-Fi perspective inside a LAN environment or a Wi-Max, depending on the access they build for their own WAN solutions or driving on to a service provider network. From a security perspective, one could look at providing managed security within the enterprise. Enterprises are looking at this with great interest and depth now because that is one of the major concerns that chief information officers have in large enterprises. But in the small and medium business segment, connectivity is the basic requirement for information exchange with various branches.

Vendors are responding to these needs. More than standard managed services, it has become a complex service. So, such needs have been responded to by even technology vendors like Juniper, which keeps its focus on the traffic-processing arena with the objective of providing infrastructure and secured delivery of information.

### Sudhir Narang

Businesses of all sizes today face increased network complexity, changing bandwidth needs, and reduced budgets. Nevertheless, they often find that the traditional solutions to these challenges distract them from their core business strategies. In the current economic environment, focusing on core competencies is the key to survival and success. This is giving rise to a new trend of managed services. Enterprises can outsource some or all network services to a managed service provider. In turn, the provider can design, deploy and manage virtual private networks, internet protocol (IP) telephony, security and other network services, freeing companies to focus on core tasks. Managed services can help businesses reduce overall network costs by 15 to 25 per cent. Capital expenditures become more manageable operating expenses. Companies can streamline IT operations and networks are more flexible and easily scaled. Organisations gain network expertise that their own IT staffs may lack. And service providers can leverage existing network infrastructures and expertise while developing new revenue streams. Some technologies that Indian enterprises are looking at and adopting are:

- Managed IP-VPNs – According to IDC, the VPN market (managed or unmanaged) is slated to touch \$97 million by end 2005. For an enterprise, managing VPNs requires large capital outlay for equipment and ongoing commitment of human resources. Out-tasking the same is advantageous as many companies can share the costs of using a common infrastructure – a concept that has taken off among some Indian enterprises. Bajaj Auto in the private sector and UCO Bank in the public sector are two such examples that have adopted this approach and are benefiting immensely.



• **Managed IP telephony** – One of the critical areas that SMBs need to address is communication costs. Communication costs are a significant portion of the overall expenses of an enterprise. By adopting IP telephony, business operations can make savings in communication costs. In the Indian context, IP telephony is only legal in a closed user group (CUG) environment, in which case also enterprises save significant costs on internal communications between their offices across the country.

• **IP-managed security** – Today IT is at the heart of all business operations, irrespective of the size of the business. Hence, it is imperative for the enterprise's network to be secure and repel any form of cyber attack. A recent Gartner study found that 97 per cent of cyber attacks exploited known security flaws for which a patch already exists. Clearly, investing in security applications is not adequate and enterprises need to continuously monitor their networks and constantly upgrade their knowledge vis-à-vis new threats, viruses, patches, etc. – something that is not their core competency. The Indian security services market aggregated a very healthy growth of 74 per cent during 2004-05. In the preceding year, this sector had witnessed a growth of 35 per cent. Clearly, we can expect this sector to grow at an extremely rapid pace, owing to the increased security threats amid lots of malware detection and so on.

**Alpesh Sarvaiya**

**IP applications** – More than any other single factor today, real-time internet applications and data sharing are driving dramatic changes in enterprise communications systems. These applications are beginning to show us the full power and potential of the internet as the backbone of business networking. The differentiating factor is now the ability to manage multimedia interactions efficiently and to deliver information to business partners in real time. Technologies that have huge potential in the near future are:

- **IP/VoIP-based applications** – Internal enterprise communications (intranet) over diverse geographical locations.
- **Smartcard/RIFD based** – Access controls, payment collection in industries like hospitality, road toll collection, entertainment and shopping malls.
- **SMS** – Banking, ticketing, interactive game shows, etc.
- **Linking the LAN to WAN** – True collaboration requires a communications infrastructure that links a company's LAN to the WAN.
- **Live web multicasts**
- **Click-to-talk websites**
- **Integrated supply chain services**
- **Thin-client computing**
- **Secure remote access**
- **VoIP**
- **Virtual call centres**
- **Telecom hosting**

**What are the biggest bottlenecks that enterprises face in meeting their telecom needs?**

**Dhananjay Ganjoo**

The government needs to change its archaic law of not allowing the merging of PSTN and private networks on a single infra-

**“To meet the changing needs of enterprises, suppliers must be able to offer a strong convergence product line, e-business applications and a cost-effective business model.” Alpesh Sarvaiya**

structure. We are the only progressive country in the world that insists on having a separate network for PSTN connection and private data and voice networks. Till such time as this law exists, the Indian enterprise will not be able to fully exploit the benefits of technology led by convergence.

**Java Girdhar**

One of the biggest problem areas is that the level of complexity has grown so much that it is becoming difficult for organisations to first apply newer technologies and then manage these technologies. Enterprises need to look at ways to seamlessly integrate and manage these technologies. Vendors like Juniper position products that provide for application exploration. We have always attended to calls based on need from both service providers and enterprises at large.

**Sudhir Narang**

Enterprises today are faced with two main challenges – availability of bandwidth and cost of managing their networks. With increasing dependence on the internet for transfer of data, Indian enterprises need broadband speeds (256 kbps or higher). Given the spiralling number of enterprises, service providers need to scale up their existing network capacity in a low ARPU environment. This is currently happening with all major service providers investing in building next-generation broadband networks across the country in phases.

The other challenge that enterprises need to look at is the cost of managing their own network, which is becoming increasingly more complex. Besides having a large in-house IT team, they also need to invest in keeping them abreast of latest advances in products/technologies. The advent of managed services addresses this as enterprises can outsource part or all of their networking and communication needs to service providers and build in very high service level agreements.

**Alpesh Sarvaiya**

In spite of the growing customer base, the cost of internet broadband/SMS is still high. Technology is changing at a fast rate; equipment bought two years back is not depreciated while technology enhancements and changing business requirements need upgradation investment, which is capex. Businesses usually prefer opex while vendors are keen to sell solutions.

Telecom services in the country pose challenges during traffic peaks. Last mile often isolates enterprises from the network. Shortage of trained manpower to manage the deployed applications, ongoing security monitoring and management also pose major challenges to the CIO. The most frequent bottlenecks are price sensitivity, customisation, security and incompleteness of the solution. ▲