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Enterprises in verticals such as manufacturing, retail, travel and hospitality, and media and entertainment usually have a sales and distribution network across the country. In this scenario, data transfer between various offices in a timely manner becomes a challenge.

These enterprises are increasingly leveraging telecom as a strategic business tool, with the aims of improving their go-to-market strategy and meeting the requirements of various user segments.

Typically, the communications infrastructure of these companies is based on a hub-and-spoke model, under which a central location, the “hub”, is used to reach out to the consumer, while seamless extensions (the “spokes”) are leveraged to provide services across locations. The hub’s role also includes developing product manufacturing capabilities, customer management, ensuring regulatory compliance and uniform standards of delivery, and manpower management. The spokes usually function as a delivery centre.

According to KPMG, this model provides a viable cost proposition to enterprises while allowing vendors to deliver seamless services. “It provides flexibility in service delivery as vendors can scale up/ down their operations as per clients’ requirements. The model also helps organisations gain business insights by being close to the customer,” says a company official.

These enterprises utilise multiple technologies and platforms as part of their wide area network (WAN) set-up. In most cases, the WAN at a multi-location company comprises Ethernet transport networks and dedicated internet access. This network provides seamless and always-on connectivity across the enterprise’s headquarters, remote offices and data centres, with redundant and distributed internet connectivity. Other widely deployed WAN technologies include leased lines, MPLS, IP-VPN and optic fibre networks.

Moreover, these enterprises are increasingly opting for various hosted solutions, in particular,

the hosted IP-PBX and VoIP platforms. According to the respondents, hosted IP-PBX systems are less expensive to install as compared to traditional PSTN systems and offer a standardised set of services. Also, these systems have lower maintenance requirements and do not need upgrades as they are hosted remotely. Another widely deployed technology is VoIP, which requires a single wiring system, supports peer-to-peer phone calls and has a web-based administration.

Interestingly, the cloud-based platform is being used extensively by these companies to collaborate with their distributors, receive data related to sales and inventory in a timely manner and ensure that data is standardised across technology platforms.

Securing the network is a priority for these companies. Security platforms and technologies used by these entities include firewalls, Symantec security solutions, firewalls with UTM facility in the gateway, antispam devices for mailing solutions and antivirus applications.

Mobile handsets and personal digital assistants are also being used extensively. These mediums enhance efficiency and streamline the flow of information from the field to the head office. Also, proliferation of the internet has made information on products and services readily available to customers and suppliers.

Most companies with an extensive sales network also have data centres in place, which typically perform functions such as ensuring server uptime, archiving of data recovery and power backup and providing end-user support. In fact, some players also utilise this medium to archive data on a weekly or monthly basis.

According to a study by MGI and McKinsey's Business Technology office, big data is expected to emerge as a major technology trend for multi-location enterprises. This will be driven by the increasing volume and detail of information captured by enterprises and the growing use of multimedia and social media, and the "internet of things" concept.

Moreover, industry analysts are of the opinion that trends such as the growing adoption of smartphones and tablets, social networking mediums, video-based platforms and tools that support real-time predictive analysis of data will gain momentum going forward.

Technology has permeated all levels of functioning in multi-location companies. This has helped these players increase the content distribution channels and streamline operations.

tele.net surveyed various organisations with a wide sales and distribution network to assess their telecom requirements and solutions. The following questions were asked in the survey:

- What are the organisation's key technology requirements?
- What mix of service providers and vendors is used?
- What are the biggest concerns with respect to telecom infrastructure?
- What are some of the mobility and enterprise applications adopted by the organisation?
- Which network security tools are being used?
- What redundancy tools are being utilised?
- Which new product or service holds the most relevance for the organisation?

Key technology requirements

According to the survey, telecom is used as a strategic tool by these companies to ensure integration of data, lower cost of ownership and shorter time-to-market and to make their

networks scalable and flexible.

The most widely deployed technologies are leased lines, optic fibre networks, MPLS, Wi-Fi, VPN, IPLCs, ISDN, the internet, DSLs, ATM/ frame relays, metro Ethernet, and VSATs.

The companies' telecom set-ups typically comprise a mix of wireless and wireline technologies. Wireless connectivity platforms are mostly used for last mile access. For example, to transmit audio broadcast from the studio to the transmitter (the studio transmitter link), Reliance Broadcast Network Limited (RBNL) uses telecom links such as VSATs, leased lines and ISDN lines. According to Shahid Ali, senior manager, technical, RBNL, "Every broadcast company in India has multiple stations across the country. These are connected with multiple telecom links to the corporate office in a point-to-point pattern and typically comprise VPNs and leased lines. With the availability of advanced technologies, the majority of a broadcasting company's studios and transmitters are on the network and can be accessed at any location with the help of links available at any centre."

Similarly, media major Eros International Media Limited (EIML) uses leased lines, IPLCs, ISDNs, ATM/frame relays, the internet and MPLS. ISDN lines offer the entertainment major high download speeds and allow it to deploy new applications such as video/audio streaming without interruption. The technology also helped transmit voice, data and video through a single line so that several people could be online simultaneously without any reduction in speed or data transmission loss.

Also, Tata Power uses an MPLS-based WAN and an optic fibre-based ring topology, which is spread across Mumbai and uses gigabit bandwidth. MPLS is also used by the company to connect its remote project sites. The bandwidth of this MPLS network ranges from 2 Mbps to 100 Mbps, depending on the company's requirement.

Meanwhile, companies such as Britan-nia Industries Limited (BIL), Godrej & Boyce Manufacturing Limited (GBML) and Sistema Shyam TeleServices Limited (SSTL) use a single technology as the backbone of their communications infrastructure. BIL has opted for MPLS technology to connect its remote offices. Currently, over 120 remote offices are connected through this medium. Similarly, SSTL's 300 offices are connected through a WAN. The company's circles and head office are connected through a high speed internet network, while its data centres in Noida and Chennai are connected through the synchronous transport module (STM) technology. Its retail network is interconnected through a VPN, which connects to its

central system through over 20,000 secured access lines.

GBML is using a centralised data centre, which is connected to all showrooms through a VPN, with an integrated services digital network link for backup. The VPN link has helped streamline operations and provided benefits such as enhanced network security, remote network control, easy sharing of files, improved network performance and lower costs.

Several IT tools and platforms are also used by these companies. SSTL, for instance, uses the Foris platform sourced from Sitronics. According to Rajeev Batra, chief information officer, SSTL, the company undertakes various key functions using Foris. These include billing, customer relationship management (CRM), fraud management, collaboration and messaging, provision of infrastructure support and data centre operations.

Interestingly, SSTL is the only respondent using private cloud computing. It is offering its retail customers all business products and services through this medium. Moreover, several core functions are undertaken through a private cloud and a large number of retail players use SSTL's wireless broadband service for connecting to this cloud for their business transactions.

BIL has also opted for several SAP-based IT applications. According to Pranay Sundas, IT manager, infrastructure and security, BIL, the FMCG major is running all SAP modules available in India, including finance, human resources, maintenance and production. Also, BIL uses several data analytics tools that provide officials information on daily sales. All these applications are hosted on a single, centralised platform at the company headquarters.

Similarly, Micro Technologies India Limited (MTIL) uses enterprise resource planning (ERP) and CRM tools. These solutions have been developed in-house and while CRM is being used extensively, the company is in the process of implementing ERP, which will be completed over the next three months.

JourneyMart.com's telecom network also includes the MDaemon local mail exchanger, which stores all mails locally to enable mail restoration during a crisis situation. It also helps reduce traffic associated with local mails and the exchange of file attachments. Monitoring of the user's mail account and multiple access via any medium is also provided in this mail solution.

All the surveyed companies have established a data centre as part of their communications infrastructure. Delhi Transco Limited (DTL), for instance, has an in-house tier 3 corporate data centre at its Delhi office, which hosts more than 30 servers that are operational 24x7. The key features of the data centre are redundant power supply from three sources; two mains and a 100 kV diesel generator set; two 60 kVA UPS systems; security and safety systems; a fire, heat and smoke alarm system; a VESDA system for smoke detection; a proximity card-based access control system; IP-based CCTV surveillance; and a building management system and its integration with data centres.

BIL also operates a data centre in Bengaluru, which is connected to its remote locations, regional offices, manufacturing locations and depots. The data centre hosts all applications used by the firm for its daily operations and its servers.

Service providers and vendors

Companies with an extensive sales and distribution network use the services of a mix of telecom and IT operators including Tata Communications, SAP, Reliance Communications (RCOM), Tulip Telecom, Vodafone India, TATA DOCOMO, Check Point Software Technologies Limited, Hewlett-Packard, Cisco, Bharti Airtel, BlackBerry, Websense, Bharat Sanchar Nigam Limited, Siebel, Fortinet, Sify Technologies and Juniper Networks.

Key issues and concerns

Aligning new infrastructure components with the existing set-up, increasing the cost of technology, the lack of qualified IT staff, working with multiple vendors, strengthening the existing communications set-up to remote areas and identifying the appropriate service provider are the major challenges faced by the respondents.

For Tata Power, major challenges are identifying an appropriate service provider with experience in implementing a communications set-up and upgrading the same within the allotted budget.

Meanwhile, the respondent from BIL says that extending the telecom network to all remote offices is an issue. “Getting a single vendor to provide connectivity to all these locations is a challenge. We consulted several companies and undertook significant research. Finally, we have opted for vendors based on their presence and strength in specific areas,” says the respondent.

According to Mahindra Holidays & Resorts India Limited, working with multiple vendors, aggressive timelines and vendors’ failure to meet their commitments are major challenges. “In addition, identifying the appropriate service provider and providing connectivity in non-accessible remote locations present challenges in deployment,” elaborates the respondent.

Mobile and enterprise applications

Several enterprise applications are being used by these companies, including audio, web- and videoconferencing, email, web hosting, instant messaging, toll-free services and VoIP.

In terms of mobile applications, these companies use mobile email, mobile data connectivity, corporate intranet, conferencing solutions, push alerts, mobile access to supply chain management and vehicle tracking.

Club Mahindra uses mobility solutions such as BlackBerry smartphones, iPads and the active sync facility on handsets.

BIL uses fewer mobility applications as compared to other respondents, but select sales officers have been provided high speed data cards sourced from RCOM and TATA DOCOMO. These officials have been provided internet connectivity to access the firm’s corporate applications.

Network redundancy

Several platforms are used for network backup. For example, Tata Power has a disaster recovery data centre, which functions as a mirror site. Any transaction at the company's headquarters is replicated to the disaster recovery site, which allows instantaneous data recovery in case of a network slowdown.

BIL uses two 10 Mbps internet links sourced from RCOM and Bharti Airtel. It also uses a 20 Mbps link provided by RCOM and Tata Teleservices Limited. EIML uses mirror servers and server provider diversity. Apart from two backup systems, MTIL uses a solar power-based redundancy system.

Network security

Securing the communications network is a key priority for the respondents and they use a multi-tiered set-up for the same. Usha International Limited (UIL) uses security applications and devices including a firewall in the high availability mode, antivirus and antispam tools, and the gateway load balancer platform.

Security applications used by JourneyMart.com include hardware-based IP firewalls, internet content filtering and caching solutions and a dedicated staging server with IP and MAC security. This server ensures that the content uploaded on the site is first tested locally and is free from any malware. A McAfee-based network security enterprise solution is also in place.

The way forward

Most of these companies plan to strengthen their telecom network. UIL, for instance, intends to deploy a solution to improve business processes and leverage the communications set-up.

Also, GBML is establishing the new Microsoft Dynamics AX platform across company-owned, company-operated stores. The company is also looking to implement mobility applications. On the operational side, it plans to add CRM and offer loyalty benefits to customers.

Meanwhile, Bangalore Electricity Supply Company Limited plans to implement a web-based management information system application to ensure an improved data management process, better organisational control and automatic managerial processes. It also plans to use smartphones for data management and effective communication, and digitise existing data.

RBNL is looking to work on a networking model, under which most of the radio stations will be controlled by a centrally located radio station through WAN.

Meanwhile, Tata Power plans to deploy the enterprise single sign on and single identity management platforms, set up email solutions that offer infinite storage, ensure email connectivity in case of any disaster, establish enterprise storage solutions with infinite access for corporate purposes and geographic information systems, expand existing adaptive multi-rate audio codec schemes and establish mobile solutions for remote monitoring of its receiving stations.

To conclude, a robust telecom network is helping companies with a large sales and distribution network to better manage their assets, thereby strengthening their market position.

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