



Technology Options

There has been a fundamental change in the way an enterprise views a PBX today. Ditto for the position that a PBX commands within an enterprise. Less than five years ago, PBX was not as central to the business as it is today. Today, many enterprises rely on it, as it offers them competitive advantage. Then PBX was just a voice switch; but today, it is a switch that can also facilitate data and video communication. In other words, it is the protagonist that would make convergence possible.

However, not all PBXs are like that. Nor would every enterprise need a PBX that is a powerful convergence tool. The Indian PBX market is still predominantly traditional, with voice being the prime application. And within voice, it is the call-switching function that is widely used. Features like voice-mail (that have long been available) are rarely used even by the most tech-savvy people. This is largely because people have never felt the need to do more. Time, however, is changing.

For an Indian enterprise today, there are four broad categories of technology options available to choose from. Even though the good old analog PBX is a passé in the rest of the world, it still survives here, in India. However, rarely would a new enterprise buyer find it attractive for his or her business. Then there is the feature-packed digital PBX available that an enterprise could rely on for efficiently managing its voice-related needs.

But the talk of the town today are the IP-enabled and pure IP PBXs. While an IP-enabled PBX is basically a circuit switch with an IP interface, a pure IP PBX is designed based on an IP platform. While both can enable VoIP, the former would permit a limited number of communication channels over IP and would require an intervening operator. On the other hand, a pure IP-based platform would incorporate RAS functionality and will allocate an unique IP address for each telephone, thereby permitting free and transparent connectivity with the IP world, with the need for an intervening operator. The key point here is that IP offers unlimited functionality and applications that an enterprise would surely need for achieving its business goals more efficiently and cost-effectively. For example, an IP PBX would allow companies to do such things as video-conferencing and unified messaging from a single platform.

More importantly, upgrades are easy and less costly on non-proprietary, open-standard platforms, on which IP-PBXs are based, unlike the traditional switches that rely on vendor-owned closed and proprietary standards. This essentially means that if an enterprise wants to integrate new applications into the solution, it can always look for any vendor. On the other hand, the traditional PBX, with their closed and proprietary architecture, bind the user to one

Broad PBX Types

- Analog
- Digital (Circuit Switched)
- IP-enabled
- Pure IP

Voice&Data - GoldBook

vendor for all adds and changes.

Enterprises looking for more applications in a PBX should not necessarily buy an IP PBX now. For many of the enterprises, it would be a costly investment that can not be justified in a country like India that still does not permit integrated voice and data networks. However, every enterprise willing to buy a PBX, should at least look for a solution that would facilitate easy migration to IP whenever such a need arises.

Consulting Board

Manish Sablok, national marketing manager, Tata Telecom

Rajesh Tuli, managing director, Coral Telecom

Buying Tips

With hundreds of choices available in the PBX market, choosing the one that would not only meet your current business requirements but also take care of the future needs, is not going to be an easy job. The job is compounded by the fact that the cut-throat competition between vendors has meant that they are always more eager to push their own product and less interested in considering the needs of the user. So listed below are some tips that an enterprise should keep in mind before finalizing a PBX deal.

Calculating costs: When arriving at the cost of investment, avoid calculating on the basis of an immediate expenditure that would be incurred on buying a solution. Do away with that approach and rather take into consideration all the future operational costs, and costs of moves, adds and changes. Remember a short-term saving today, could prove costly for your business tomorrow.

Do not look for boxes: Buy a platform instead, so that you can make additions and changes in the communication network built around it. This way you can maximize your investment. Buying a box would limit your option and could prove to be disruptive in the future.

Bet on non-proprietary open standards: Ensure that whichever solution you buy from the vendor, avoid proprietary and closed-architecture based solutions. While upgrades are easy and less costly on non-proprietary, open-standard platforms, additions and changes are either impossible or very difficult on proprietary and closed standards.

Do not buy feature-applications you do not need: You need not buy applications, which you do not need currently. But make sure that you can easily add new applications in the future as the need arises and that too, without incurring considerable costs. For example, today, you may not need a video-conferencing application, but make sure that when you need it, you do not need to change the entire PBX but just add a video-conferencing solution to it.

Ensure interoperability: If you are looking for not just voice but many other applications, buy a solution that would be inter-operable with applications from a diverse set of vendors and solution providers.

Voice&Data - GoldBook

Check for reliability and redundancies: Don't take every word of the vendor. When encountered with conflicting versions on issues like reliability and redundancies in a solution, check out with the existing users.

In case looking for a pure IP PBX: Before you plan for an IP PBX, make sure that your existing infrastructure (like wiring) supports such a solution, and also check out for interoperability of the new PBX with the existing devices. Also ensure that the IP-addressing system can handle the new voice IP application. Also remember that in India, voice and data integration over a single network is still not allowed, so you would not be able to fully exploit the benefits of IP.

Service is important: Service-level agreements with vendors are important. Services are varied in nature, and include both usual nut-and-bolt kind of fixing of problems and sophisticated remote management. The more complex solution you employ, the better you should ask for. Some vendors offer graded services, i.e. different categories of services. So ensure what suits you best. The best service is the one that proactively monitors the system.

Indulge in some hard bargaining: Most vendors usually offer a price flexibility that ranges from 15 to 30 percent. This means that whatever price a vendor asks for, you can bring it down by 15 to 30 percent. But be cautious of a situation where the vendor succeeds in selling a phone system that is too small for your growth but sounds attractive price-wise.

Market Information

At one level the PBX market, in India, can be broadly divided into two segments. First, is the volumes market, which sees PBX system as a mere call transfer device with no urge to use its other capabilities. Second, is the high-end value-driven market, which looks at PBX as a convergence device, the center of all voice, data and video traffic in an enterprise. While the former market is dominated by a host of small indigenous players, both in the organized and unorganized sectors, manufacturing a host of low-cost systems, the latter is dictated by technology-driven big and multinational companies.

Voice&Data - GoldBook

Market Size: The EPABX market is expected to be around Rs 450 crore in 2001-02. Segment-wise, in terms of number of lines, 50 percent of the market is dominated by the low-end PBX systems. The middle-end products account for 20 percent of the market, while high-end PBXs have a 30 percent market share. However, in terms of value, high-end PBXs account for 45 percent of the market share, with the rest shared by the SME and low-end segments. Besides, revenue from services also forms a significant portion of the vendors' income.

Prices: The average price per port in the low-end ranges from Rs 1,500 to Rs 3000. Vendors targeting at the SME market are offering per port ranging from Rs 2,500 to Rs 5000. The average price per port of the high-end PBX is Rs 5,000 and beyond.

Factors driving growth: Apart from the urge and demand for more switches in enterprises, a number of other factors combine to sustain growth in the EPABX market. For one, EPABX market is directly influenced by improvement in the overall telecom infrastructure. As such, the addition of 45.4 lakh direct exchange lines (DELs) by DoT and 3.76 lines by MTNL, during 1999-2000, certainly increased growth in the market. Moreover, the net switching capacity also increased by 69.95 (including MTNL's 4.15) lines. This coupled with ISDN connections in new cities and towns, and the entry of fixed service providers like Bharti Telnet, Hughes Telecom India Ltd and Tata Teleservices, also added to the total capacity.

Apart from this, growth in the IT and IT-enabled services (an estimated 30 percent) too, fueled the demand for more voice and data switches in India. The PBX market benefited from the fact that there was a significant growth in the call center business (around 40 percent) in India. A few players like Tata Telecom, Lucent and Nortel, benefited from the growth in the call center business.

Important Vendors

- Accord
- Alcatel
- Ascom
- Avaya
- Copper Connections
- Coral Telecom
- Crompton Greaves
- Enkay
- Ericsson
- Gold Star
- Intellicon
- Matrix
- National Panasonic
- NEC
- Nitsuko
- Nortel
- Siemens
- Syntel
- Tadiran
- Voice Gate
- Voxtron (CTI)

Products and Their Features

Products

Vendor

Key Features

AI cat el	Omni PCX 400	IP-powered, advanced enterprise platform for integrated voice and data, and fixed and mobile communications LAN switching, IP telephones and call-handling capabilities on IP and Ethernet infrastructures. Fully integrated network services and applications
As co m	Ascotel ISDN PBX	Wired and cordless terminals on same platform, CTI capable and unified messaging, VoIP ready, internal S-bus for ISDN terminals, LAN connectivity, video conferencing and Internet
Ci sc o	Cisco AVVID	Pure IP-based converged voice, data, video capability, directory integration, record of missed and dialed calls, intelligent routing. Voice mail server offers applications like fax, e-mail and voice into a central depository accessible by a common front-end.
Co ral Tel ec om	IRIS - lvdX	Integrated voice and data server with up to 2000 ports capable of switching data channels swiftly. In-built VoIP gateway or ATM interface on one side and DSL, G.SHDSL, PRI, BRI connectivity Olarity reversal, message wait lamp, DTMF generation and detection. On hook transmission, fax modem detection.
Eri cs so n (H CL OA)	MD 110 and WebSwitch	Distributed architecture. Can interconnect to create systems of more than 20,000 extensions. Offers fully integrated cordless and cellular functionality. Supports IP telephony as an excellent way to integrate a dispersed work force over the IP network WebSwitch is IP telephony platform in one box. Can build a virtual PBX system that can support up to 20 offices
Int elli co n	Karel Range (MS 48, MS 128, MS 224 DS 200)	Integrated auto attendant and voice mail modules or by converging computer technology and telephony with CTI application software. Can be configured up to 1,344 ports
No rte l Ne tw or ks	Meridian IP switch and Succession Communication Server 1000	Succession Communication Server for Enterprise 1000 is designed to provide a full-featured voice over IP (VoIP) solution for enterprise environment, and also delivers a graceful migration path for companies that have invested in Meridian 1 communication systems to create a converged digital/IP network. Succession Communication Server is a robust, IP-based platform that delivers the full range of proven telephony applications from Nortel Networks. The Nortel Meridian IP switch is a Hybrid switch with PCM/TDM technology and IP. Nortel Meridian Switch can support up to 20,000 ports. The Succession Communication Server for

Voice&Data - GoldBook

Ma tri x Tel ec om	Quantum, Vision, Team, Focus, Empire	Enterprise 1,000 supports up to 640 IP terminals per server, and offers a solution capable of scaling to thousands of users as demand increases.
	Hicom Solutions (Hicom 100 E and Hicom 150 E OfficePro (for small and medium sized businesses) Hicom 300 E (for large businesses), Caracas Desk, Caracas Inn and Caracas Link (hotel solutions)	Digital Integrated Services Digital Network (ISDN) system that works on analog lines also. The vendor claims that by merely inserting a few cards, the user can expand from 16 to 20,000 connections (depending on the model).
	Definity Solutions (Definity ProLogix Solutions Tat (can support up to 450 phones), Definity Business a Communications Server (BCS) (Supports up to Tel 25,000 telephones), Definity Enterprise ec Communications Server (ECS) (supports over 400 om telephones) and GuestWorks)	Can process, switch, transport, and store multimedia communications, and deliver features and control to all elements in your network. Definity solutions also claim to deliver applications, management tools, and services that enable eBusiness.

Vendors: Tata Telecom is clearly the leader in the high-end followed by Siemens, Nortel and Alcatel. Apart from digital circuit switch PBXs, these vendors also offer pure IP and IP-enabled switches capable of transporting data and video besides voice. The medium and low-end categories are dominated by names like National Panasonic, Coral Telecom, Intellicon, Enkay and Accord. Syntel, Matrix, Crompton Greaves, Voice Gate and Gold Star, are other vendors in this segment. Many of these vendors also offer IP-enabled switches.