



## Plenty of Choices!

**The ISDN digital subscriber line (ISDL) 64/128 K leased line is witnessing a growth in banking and finance, railway and airline ticketing system, and freight management system.**

The modems market in India grew from Rs. 350 crore in 2006-07 to Rs. 400 crore in 2007-08. Atrie Technology was the leader in this market segment with more than 40 percent market share, followed by Bharti Teletech. MRO-Tek comes third, and is closely followed by D-Link. Other players include Apache, Artek Enterprise, D-Link, Dax Networks, Gemini Communications, Huawei, Linkquest Telecom, Multi-Tech, Nomus Comm-Systems, Sterlite Technologies, Team Engineers, and UT Starcom. Atrie Technology has been leading with orders from Bank of India, Bank of Maharashtra, Dena Bank, Oriental Bank of Commerce, Vijaya Bank, several PSUs, and service providers. The major customer for Bharti Teletech is Bharti Telemedia Ltd. MRO-Tek has been focusing on the leased line modems and has built a reputation for its compression equipment and media converters. The modems market has been growing with demand from corporations installing large capacity leased lines, SOHO broadband users, and increasing number of executives using datacards in laptops for connectivity to the Internet. The market for DSL modems comprises of Small Office/Home Office (SOHO) and SMEs. The ISDN digital subscriber line (ISDL) 64/128 K leased line is witnessing a growth in banking and finance, railway and airline ticketing system, and freight management system.

An increasing number of service providers

are using ADSL2, which allows copper telephone pairs to be used to provide a broadband connection that is automatically established once the PC and ADSL modem are switched on. ADSL comes with a package of benefits, such as faster downloads, always on connection, telephone and internet access together, no telephone charges, cost-effectiveness, and faster and free content downloading from the web. GSM/CDMA modems have also been witnessing excellent growth. The cellular modem market is growing at a tremendous rate. The market has been boosted by embedded cellular modems in laptop computers. A cell phone modem generally runs much slower than home broadband Internet access, slower than WiFi hotspot access, and often slower than even a traditional dial up Internet connection. The actual bandwidth supported depends on several factors:

- Quality of the phone's wireless signal (typically, the distance away from the nearest cell tower)
- Competing network traffic on the cell phone provider network
- Version of the network communication protocol employed by the provider, along with any technical limitations or extensions they implement
- Mix of upstream and downstream traffic you generate (cell phone modems support less bandwidth for uploads than for downloads)
- Speed of any network depends not only

Some **Internet providers** lease a modem or even include it free with service sometimes, so a **subscriber** should check with them before **purchasing one**.

on amount of supported bandwidth but also on its latency. A cell phone modem suffers from very high latency, given the nature of its open-air communications. When using a cell phone as a modem, there are sluggish delays and bursts of data transmission, which lower the perceived speed of the connection even further.

Most broadband modems support two kinds of network connections: Ethernet and USB. Both interfaces serve the same purpose, and either will work in most situations. Users can re-configure their modem between Ethernet and USB whenever needed, but both interfaces cannot be connected simultaneously. Ethernet is the preferred option for connecting a broadband modem, for the following reasons:

- Ethernet is technically more reliable than



“The market for modems is decreasing in the last 3-4 years. The reason is that all major service providers are coming up with the latest MPLS technologies, which do not need modems. There are various mediums like VSAT and RF which do not require modems. Bundling of services is picking up, which is another reason for the decrease in demand for modems. Key verticals demanding modems are the government sector, BFSI, and the manufacturing sector. Customers purchasing modems consider various commercial and technical specifications. Servicing and AMC are important parts of the proposal. The response time for replacement/repairing of modems is also considered before purchasing a modem.”

**Manjunath Daler**  
Regional Sales Manager, Canara Bank

### Modems Market in India - Key Players in India\*

Tier 1	Tier 2	Tier 3	Tier 4	Tier 5
Atrie	Bharti Teletech	MRO - Tek	D-Link	Others**

\*Players are included in different tiers on the basis of their sales contribution in 2007

\*\*Others include Apache, Artek Enterprise, D-Link, Dax Networks, Gemini Communications, Huawei, Linkquest Telecom, Multi-Tech, Nomus Communications, Sterlite Technologies, UT Starcom, and Team Engineers.

USB for networking.

- Ethernet cables can reach a longer distance than USB cables.
- Ethernet does not require the installation of device driver software, while USB does.
- Ethernet supports higher performance networking than does USB.

One possible advantage of the USB interface over Ethernet is hardware cost. If the computer connected to a broadband modem does not already possess an Ethernet network adapter, one must be purchased and installed.

A cable Internet subscriber needs a cable modem that hooks up to the subscriber's computer and cable outlet, and the service provider has one on its end as well. Some Internet providers lease a modem or even include it free with service sometimes, so a subscriber should check with them before purchasing one. DSL subscribers also need a separate modem, but it is an entirely different piece of equipment than a cable or dial-up modem. This modem attaches to the existing phone line that will also act as a medium for uploading and downloading. Service providers usually provide DSL modems along with other services available. Dial-up modems are the oldest kind of modem, and still have the original infrastructure of the very first modems developed back in the 1960s – but updated of course. Dial-up modems use the existing phone lines and are significantly slower than DSL and cable Internet, so endure longer wait times to connect and download. Alternatives such as ISDN, DSL, and cable modems are faster still, but they can be expensive to install and require monthly fees.

### The Future

The modems market is sure to take off with the launch of 3G services in India. The 3G rollout in India will promote IPTV, movie downloads, and mobile TV. The government's thrust on broadband and its regulations to mandate internet speed at 256Kbps for broadband operators is promoting broadband. ■