

As per IDC research, Internet server providers have never faced such an intense competition. With the new entrants from offshore locations, new delivery models being developed, the convergence of software, hardware, and services, and ever more demanding customers, ISPs are faced with a multitude of challenges. Those providers that are able to anticipate the changes and execute their vision, will stay on the top of the market.

Whether you want to join the Internet server providers bandwagon or are already into it, to remain into within it, it is necessary to understand the World Internet usage trends, market growth, how much market is untapped and how the usage interest areas of people around the world is changing.

Initially, majority of the Internet users were the researchers from various fields who used Internet for their research work but then the Internet usage awareness increased when organizations realized its usefulness in day-to-day functioning and how can it be used for communication. This awareness changed the trend in how the Internet is being used today. Not only organizations but the individual user also started using it for day-to-day communications and entertainment.

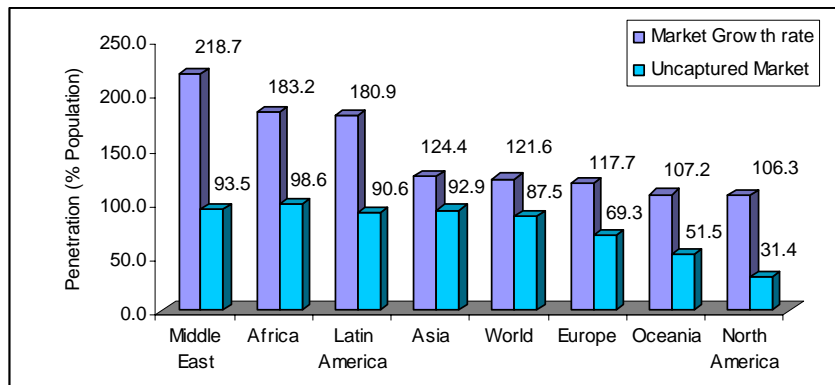
To satisfy the constantly changing user's needs/requirements of high speed access interface, access Networks evolve and the requirement for the products that support them also evolve. Access speeds and technologies require a broader range of interfaces and protocol support.

Different technologies provide fast transfer of data to and from the Internet and one of it is broadband connection. Broadband Internet connections offer much faster data speeds than typical dial-up connections.

Let us take a look at few types of Internet connections before broadband access networks came into practical usage.

Dial up

A dial-up connection is the smallest pipe one can use to connect to the Internet. It is fast enough to read information and download small files, but it has problems with video connections, multimedia-intensive Web sites, and high-speed games. Dial-up connections, require you to connect to an ISP over a phone line, so



you cannot talk on the phone and go online at the same time without a second phone line.

ISDN

Integrated Services Digital Network (ISDN) modems, with speeds up to 128 Kbps over two phone lines, provide a step up from an ordinary dial-up modem. ISDN uses more advanced networking protocols to double or even triple the speed of dial-up modems. However, the pipe is still small.

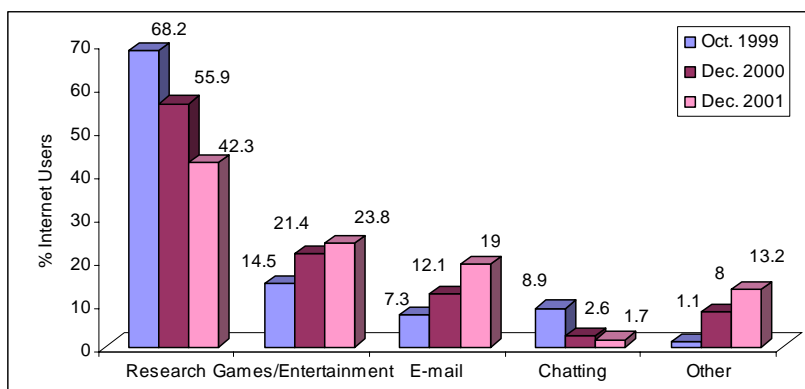
None of the previously mentioned connection types satisfied users because

it served the purpose of Internet surfing only. A typical speed for a dial-up modem is 56 Kbps and cannot support transmission of high speed data, voice and video.

As Internet usage continues to grow exponentially, it is becoming more and more essential for organizations to have access to it in order to communicate both with staff in the office and on road,

Lastly, cable Internet does not require a phone line, so it is a perfect fit for people who have made the move to strictly using wireless phones or for those who are used to dialup.

Cable service can be a good value for high-speed access. Still, there are some significant limitations. Cable is a shared network. When too many users try to



share the same cable, performance can suffer dramatically. For this reason, Cable subscribers are not able to telecommute, host web sites, use video teleconferencing and many other bandwidth eating applications. There are also certain

develop online presence, and better serve their missions. While many organizations have access already, it is still important for them to consider more efficient connection alternatives. The networks must support mission critical application and real time business applications.

security risks which can make users more vulnerable to data interception, unauthorized monitoring and hacking, denial of service attacks etc. along the same cable network.

Again the video revolution made it necessary that Networks support those applications for the Home users and videoconferencing for Business users.

DSL

Broadband options offer the best of all: high-speed connections at affordable prices.

DSL (Digital Subscriber Line) is the next generation of Internet access technology.

Cable

Transmitted over coaxial cable lines, cable can provide speeds of 256 Kbps to over 1 Mbps. Cable connections are always on.

Currently, the most cost-effective way to bring high-speed, always on broadband access to home users and organizations is to utilize existing copper line telephone network. DSL technology offers a number of alternative solutions, and is currently deployed globally.

Cable share a set amount of bandwidth with a group of accounts, so the size of the data pipe available to an individual user varies depending on how many subscribers are using the Internet at the same time. When few people are online, data speeds can be extremely fast; when many are online, connection speeds can be considerably slower.

DSL connections are relatively inexpensive, always on, readily accessible to home users also through local telephone companies, and desirably fast, with speeds that can reach 1.5 Mbps and higher.

DSL allows subscribers to transfer large amounts of data over phone lines at very high speeds and at a reasonable price. However, DSL offers many advantages beyond speed, both to the subscriber and the service provider.

A key advantage to the subscriber is having an "always on" connection. Since DSL service is always on, there is no wait for a dial-up modem to dial and connect before data can be sent. The subscriber is always connected and there is no delay each time a connection is needed.

In addition, a DSL account has a preset amount of bandwidth available for upload and download and does not share bandwidth with other users.

DSL also allows the Service provider to control the quality of the data transmission. This allows the service provider to transmit content to the user in real-time. It also allows the service provider to price DSL service according to speeds and parameters provisioned.

For home users, DSL access can mean an affordable way to enjoy content-rich services such as streaming video and music and personalized communication services. For business, it can mean an affordable way to carry out high bandwidth, global communications, taking full advantage of today's Internet technology.

But there are limits on the distance DSL signals can travel before degrading.

Lease Line

Lease lines are high-capacity (large pipes capable of moving huge flows of data), always-on connections and directly connect a local area network (LAN) to the Internet, usually through a telephone company for the private use.

Large organizations rent leased lines to interconnect different geographic locations in their company.

Increasingly, leased lines are being used by organizations, and even by individuals for Internet access because they afford faster data transfer rates and are cost effective if the Internet is used heavily.

Wireless (Wi Fi)

With recent advances in wireless Internet technology, a high speed Internet connection is no longer limited to stationary desktop. High speed, wireless Internet access on laptop is now available from a number of wireless Internet service providers.

Wireless networks offer freedom to work or play. Wireless networks allow sharing of computer peripherals and data files from anywhere within wireless networks for greater efficiency.

It helps business travellers to improve productivity on road. From user authentication to VPNs, Wi-Fi in an organization requires enhanced security.

The last couple of years have seen a definite shift in the preferred choice of access technologies by home users and corporates. The shift is obvious towards the broadband. Although a proportion of new corporates opt for broadband as their first Internet connection, this trend is predominantly a result of the migration to broadband.

While dial-up still remains the dominant Internet access technology, broadband access technologies continue to take hold.

The shift to more bandwidth hungry applications like Internet telephony, voice chat and download intensive applications will definitely lead to a gradual move away from the dialup.

Challenge to ISPs

New network & service management challenges

As the Internet grows in popularity, choosing the right connection for accessing from the wide range of access technology available, is becoming a very important decision for subscribers. While modems still provide many home users and smaller organizations with their crawling connection, DSL, cable, ISDN, and T1 are introducing many organizations to the joys of high-speed access.

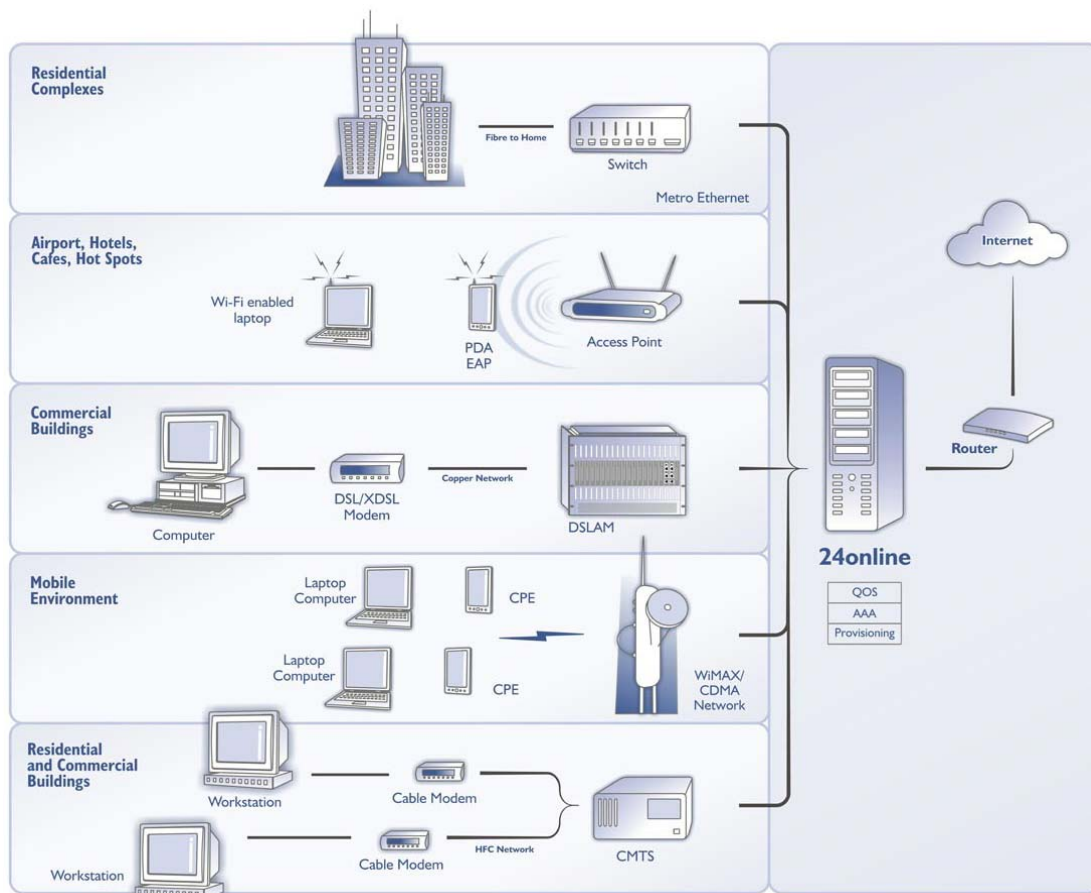
While broadband is rapidly gaining market acceptance, it is not clear which delivery models and applications will gain market acceptance. Service providers must design their delivery infrastructure to support the diverse needs and various network architectures, regardless of what they are or how they are billed.

Moody's, the credit rating agency, says telecom and cable companies need to offer at least the triple play bundle i.e

voice, video and data in order to remain competitive.

Changes in the access networks are changing the requirements of products that sit at the edge of the Service Provider networks. The convergence of network infrastructures presents a new set of challenges in terms of managing the network and the services that it provides.

The main challenge for ISPs, when offering support to a new network or new service, is to do so quickly and cost efficiently.



ISPs must be competitive, yet still make a profit. They must have capability to provide all the aforementioned services and functionality and remain confident that their investment is future-proof. And they must be able to offer bundled services that allow subscriber's to obtain all their communication needs from one provider.

Service providers are migrating their networks to VoIP to meet the increasing customer demand for new VoIP-enabled services and to create new revenue generating opportunities.

With the usage of various Internet access devices mentioned above, managing, monitoring, maintenance and programming of these devices is becoming more and more complex creating a need for solutions that expose the features of such devices while hiding the unnecessary details from the subscribers.

The challenge then, for the service provider, is to manage the complexities of network infrastructure and deliver rich

new services but with minimized operating costs.

After overcoming technical and operational issues, Service providers must address the key business challenges of accelerating profitability and growing new markets. 24online enables Service providers to supplement the basic connectivity with value-added services that generate new revenue, improve customer retention and increase ROI i.e. offer customer incentives without increasing capital expenses.

With the trends that industry follows, ISPs should plan for the future that is capable of delivering to new technologies and additional revenue generating services.

For these reasons, ISPs should converge their services into a single, multi service network. As indicated in the previous sections, the increasing diversity of end users and end devices requires an support to an array of different technologies. 24online supports multiple technologies and multiple end devices as illustrated in the diagram.

24online provides a flexible and open platform for providing additional revenue generating services in future.

24online helps to get you there



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