

ALL YOU NEED TO KNOW ABOUT BROADBAND

Broadband is finally making its foray into the consumer internet communications market. Home subscriptions to ADSL and cable services are rising steadily as prices fall, and the end of the 56K dial-up modem is in sight.

However, in the corporate space broadband connectivity is commonplace, with low-tech Integrated Services Digital Network (ISDN) lines giving way to extensive cable infrastructure generating data transfer speeds of Megabits-per-second (Mbit/s). Currently wireless, satellite and next-generation mobile telephony are linking users to the internet and businesses to other businesses, spawning a revolution in mobile networking and business communications.

But broadband is full of acronyms. This briefing is designed to cut through and explain some of the more important terminology.

Broadband options

There are four types of broadband offering on the market:

● DSL (digital subscriber line)

DSL in its usual guises (ADSL, SDSL and VDSL) works on the premise that data can be digitally transmitted along the same copper line that you use for voice telephony without affecting the telephone service. Traditionally when a computer receives information from the internet over a phone line, the telephone company filters information that arrives as digital data and converts it into analogue for telephone lines, requiring the computer's modem to change the

data back into digital form. A DSL transmission is digital throughout, allowing lines to carry more data. And unlike dial-up services and ISDN, DSL is 'always-on' – you do not have to wait to establish a connection.

DSL usually provides bandwidth of anything from 500Kbit/s (kilobits-per-second) to 1.5Mbit/s.

● Cable

While cable is the most common high-speed connection for business, the high cost of digging up streets to lay the infrastructure and connect businesses has made cable relatively expensive. However prices have recently become much more competitive.

Cable services are transmitted across fibre-optics via laser light bouncing along mirrored glass tubes buried in the ground. It can offer speeds of anything from 2Mbit/s to over 100Mbit/s.

It's interesting to note that broadband is a relative concept – it isn't the size of the line your business is connected to that determines the speed of data transmission, it's how many people are sharing that bandwidth. For instance, a business with 300 employees connected to the internet via a 2Mbit/s cable generally only offers speeds slightly quicker than a dial-up service as the bandwidth has to be shared by all staff.

● Satellite

Satellite broadband services should not be confused with 'wireless' broadband (see below). Usually used in remote areas where cable, wireless and DSL are not available, a satellite dish can be mounted on

your home or office which can send and receive data via satellite to your internet service provider, connected to the internet via a land line.

● Wireless

Wireless broadband connections transmitted via various frequencies of the radio and microwave spectra can provide up to 55Mbit/s data transfer. Signals are received from an antenna usually housed on the outside of an office building and are distributed via smaller antennae within the building. Wireless internet means that any PC, notebook or mobile device can access the internet from any location within the building without wires through a wireless network card housed in the device.

Wireless frequencies usually inhabit the unlicensed band at about 2.4GHz. The technical standard, called IEEE 802.11b, allows for speeds over 10Mbit/s over a range of up to 300 feet from an antenna.

Glossary

● ADSL (Asymmetric Digital Subscriber line)

This is high speed internet access that works over a regular phone line. Downstream speeds average 1.54Mbit/s, and upstream speeds range from 256 to 512Kbit/s.

● Bandwidth

The amount of data that can flow through a communications channel.

● Bit

A single unit of data, either a one or a zero. In the context of broadband, bits are used to refer to the amount of transmitted data. A kilobit (Kbit) is approximately 1,000 bits. A megabit (Mbit) is approximately 1,000,000 bits.

● Bluetooth

Emerging standard for data exchange that links electronic devices using short-range radio waves.

● Byte

Eight bits equals one byte. A byte is the standard unit used when des-

cribing storage capacity and file size, *not* data transfer.

● Dial-up

A connection using a modem and a standard telephone line to connect to the internet

● Downstream

Data flowing from the internet to your computer.

● ISDN (Integrated Services Digital Network)

A digital signal that travels over existing phone lines. It works in channels and each one is capable of 64Kbit/s transmission speed.

● SDSL (Symmetric Digital Subscriber Line)

Downstream and upstream speeds are equal and can be anywhere from 160Kbit/s to 1.54Mbit/s.

● Upstream

Data flowing from the computer to the Internet.

● VDSL (Very High Bit Rate DSL)

Users must be within 4,500 feet of a central office (a circuit switch where the phone lines in a geographical area come together). It provides data rates of 13Mbit/s to 52Mbit/s downstream and 1.5Mbit/s to 2Mbit/s upstream.

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www.financialdirector.co.uk/briefing

Useful links

● Broadband glossaries:
www.microsoft.com/hardware/broadband/networking/glossary.aspx

<http://asia.cnet.com/broadband/features/0,39001780,38007833-1,00.htm>

● The Broadband Stakeholder Group is the UK Government's key advisory group on broadband issues for business and consumers. It can be found at:
www.broadbanduk.org/index.htm