

# Telecommunication systems in a cybercafe

Technology, Information Technology



Telecommunication Systems in a Cybercafe The cybercafe business has two essential hardware: the computer terminal and the link to the Internet. The business I own uses desktop computers with central processing units that utilize 512Kb double-data-rate synchronous dynamic random access memory (DDR SDRAM), an 80-gigabyte harddisk with an independent 128Kb video card. It has a DVD ROM and DVD writer and floppy disk drive as well as USB ports.

The monitor is a flat-screen 15" SVGA CRT monitor. The computer also has headphones with built-in microphones and a USB web camera for videoconferencing as well as online chatting. Many people make video calls to people in other countries, usually families and friends, over the Internet at a low hourly rate at the cybercafe.

The computers are Local Area Network (LAN) capable with built-in modems. The computer can be connected directly to an ordinary phone line for dial-up Internet access. But this is not a real option for a serious Internet surfer or video caller as dial-up speeds only go as high as 96 kilobytes per second (kbps), and result in jerky video or really slow opening of the site, especially if it is graphics heavy. Another option is using the modem or the LAN to connect to a digital subscriber line (DSL). The DSL is still a physical line, basically a telephone wire but exclusive for computer use.

For Internet access, I use an asymmetric digital subscriber line (ASDL) through the local telecommunications company. The term " asymmetric" means upload and download speeds are not the same, as opposed to a " symmetric" DSL service. (Franklin) The connection I have has a top download speed of 1 Gigabyte per second and a top upload speed of 512 kbps,

provided the RJ 45 cables do not exceed 18, 000 feet. The line is accessed through an ADSL modem provided by the telecom company. The ADSL modem is connected to a wireless broadband router with four wired terminals.

The ADSL modem in turn is connected to a switch that enables me to split the access to as many as eight desktop computers per wired terminal without significant decrease in connection speed. Wired terminals are connected via the LAN with RJ 45 to provide what is commonly know as an " ethernet" connection. Wireless computers may access the network as well as the router has access points but the speed of the connection diminishes directly with the number of wireless users.

The specifications above allow users to play LAN as well as online games, connect to E-mail and instant messaging services as well as online station-to-station chatting with audio-visual capabilities. The computer also allows facsimile and other digital documentary transmittals as well as document creation.

Peripheral equipment includes a scanner which allows the user to scan images or documents for archiving, editing, uploading or printing. The memory card reader is used to download images from a digital camera or mobile phone and the printer provides all kinds of hard copy. The peripherals need not be provided for each terminal as the computers are all networked, so this equipment are " shared" by one master terminal or server.

All these systems provide some type of communication: the LAN connects computer to computer; the switch connects all the computers to the router; the router connects the switch to the ADSL modem; the modem connects

user to the ADSL; and the ADSL connects all users to the Internet.

#### References

Franklin, C. How DSL Works How Stuff Works retrieved December 20, 2006  
from <http://www.howstuffworks.com/dsl.htm>