**Key Terms of Chapter 8**

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| **Key Term** |  | **Definition** |
| 1G (first generation mobile telecommunications) | 第一代移动通讯 | Started in the 1980s using analog radio signals to provide analog voice transmission service |
| 2G (second generation mobile telecommunications) | 第二代移动通讯 | Started in the 1990s using digital radio signals, focused on voice transmission and was too slow for effective Internet connectivity |
| 3G (third generation mobile telecommunications) | 第三代移动通讯 | Provided services capable of effective connectivity to the Internet, marking the beginning of cell phones |
| 4G (third generation mobile telecommunications | 第四代移动通讯 | Provides faster transmission speeds using LTE (Long Term Evolution) connections to provide faster internet access, allowing cell phones to easily stream videos and music |
| 5G (fifth-generation mobile telecommunications) | 第五代移动通讯 | Is the most recent generation, with speeds that rival home Internet connections |
| analog signal | 模拟信号 | Continuous electronic waves |
| asymmetric digital subscriber line (ADSL) | 非对称数字用户线 | The most widely used type of DSL which is much faster than dial-up |
| backbone | 主干（总线） | See bus |
| bandwidth | 带宽 | A measurement of the width or capacity of the communication channel |
| base station | 基站 | A network’s centrally located wireless access point that interprets incoming radio frequencies and routes communications to the appropriate devices |
| baseband | 基带 | Used to connect individual computers that are located close to one another, able to support high-speed transmission, can only carry a single signal at one time |
| Bluetooth | 蓝牙 | A short-range wireless communication standard that uses microwaves to transmit data over short distances, around 33 feet |
| broadband | 宽带 | The bandwidth used for high-capacity transmissions |
| bus | 总线（主干） | All communication travels along a common connecting cable called a bus or a backbone. As information passes along the bus, it is examined by each device on the system board to see if the information is intended for that device |
| bus network | 总线网络 | Each device is connected to a common cable, bus or backbone, and all communications travel along the bus |
| cable modem | 调制解调器 | Use existing television cables to provide high-speed connections to the Internet |
| cable service | 电缆业务 | A service provided by cable television companies using their existing television cables, usually faster than DSL |
| cell | 蜂窝 | Small geographical region |
| cell tower | 手机信号塔 | Antennae that sends and receives data |
| cellular | 移动通讯 | Communication uses multiple antennae, cell towers, to send and receive data within relatively small geographical regions known as cells |
| cellular service provider | 移动电话服务运营商 | Includes Verizon, AT&T, Sprint, and T-Mobile supporting voice and data transmissions to wireless devices using cellular networks |
| client | 客户端 | A node that requests and uses resources available from other nodes |
| client/server network | 客户/服务器网络 | A computer network where one computer coordinates and supplies services to other nodes on the network |
| coaxial cable | 同轴电缆 | A high-frequency transmission cable with a single solid-copper core |
| communication channel | 通讯频道 | The actual connecting or transmission medium that carries the message |
| communication system | 通讯系统 | An electronic system that transmit data from one location to another |
| computer network | 计算机网络 | A communication system that connects two or more computers so that they can exchange information and share resources |
| connectivity | 连通性 | Using computer networks to link people and resources |
| demodulation | 解调 | The process of converting from analog to digital |
| dial-up service | 拨号上网服务 | Using standard telephone lines and conventional modems to link to the Internet |
| digital signal | 数字信号 | A representation of the presence or absence of an electronic pulse – on/off |
| digital subscriber line (DSL) | 数字用户线 | Uses standard telephone lines to create a high-speed connection directly to a phone company’s offices, usually external and connect to the system unit using either a USB or Ethernet port |
| digital subscriber line (DSL) service | 数字用户线通讯服务 | A service provided by telephone companies using existing telephone lines to provide high-speed connections |
| directory server | 根服务器 | A specialized server that manages resources, such as user accounts, for an entire network |
| domain name server (DNS) | 域名服务器 | Converts text-based addresses to IP addresses |
| downlink | 下行链路 | Receives data from a satellite |
| DS3 | T1线缆 | Same as T1 leased line |
| Ethernet | 以太网 | The most common way in which nodes can be connected to one another and communications can be controlled |
| Ethernet cable | 以太网电缆 | Uses twister pair cable which is a LAN standard that is commonly used in networks to connect a variety of components to the system unit |
| extranet | 外联网 | A private network that connects more than one organization |
| fiber-optic cable | 光纤电缆 | Transmits data as pulses of light through tiny tubes of glass |
| fiber-optic service (FIOS) | 光纤服务 | Transmits data as pulses or light and offers speeds faster than cable or DSL connections |
| firewall | 防火墙 | Consists of hardware and software that control access to a company’s intranet and other internal networks |
| global positioning system (GPS) | 全球定位系统 | Global positioning system (GPS) devices use location information sent by satellites to uniquely determine the geographic location of the device |
| hierarchical network | 分层网络 | Each device is connected to a central node, either directly or through one or more other devices The central node is connected to two or more subordinate nodes that in turn are connected to other subordinate nodes; forms a tree like structure |
| home network | 家庭网络 | allow different computers to share resources, including a common Internet connection, can be connected in a variety of ways, including electrical wiring, telephone wiring, and special cables |
| host | 主机 | Any computer system that provides access to its resources over a network |
| hotspot | 热点 | Wireless access points that provide Internet access and are often available in public places such as coffee shops, libraries, bookstores, colleges, and universities |
| https (hypertext transfer protocol secure) | 超文本传输服务 | Widely used protocol used to protect the transfer of sensitive information |
| hub | 集线器 | The center or central node for other nodes |
| infrared | 红外线 | Uses light waves to communicate over short distances; line of sight communication |
| intranet | 内联网 | A private network within an organization that resembles the Internet using browsers, websites and web pages |
| intrusion detection system (IDS) | 入侵检测系统 | A system that works with firewalls to recognize and disable network attacks |
| IP address (Internet protocol address) | IP地址 | A unique numeric address for every computer on a network |
| local area network (LAN) | 本地网 | Networks with nodes that are in close physical proximity |
| low bandwidth | 低带 | Used for standard telephone communication (see also voiceband) |
| LTE (Long Term Evolution) | 长期演进技术 | A wireless standard, comparable to WiMax |
| medium band | 中带 | The bandwidth used in special leased lines to connect midrange and mainframe computers as well as to transmit data over long distance |
| megabits per second (Mbps) | 传输率（兆/每秒） | The transfer rate of millions of bits per second |
| mesh network | 网状网络（多跳网络） | A type of topology that does not use a specific of physical layout |
| metropolitan area network (MAN) | 城域网 | A network that links office buildings within a city, and can span distances up to 100 miles |
| microwave | 微波 | A type of communication that uses high-frequency radio waves, line-of-sight communication, can only travel in a straight line |
| modem | 调制解调器 | Modulator-demodulator enables digital personal computers to communicate across analog telephone lines |
| modulation | 调制 | The process of converting from digital to analog |
| network administrator | 网络管理员 | A computer specialist responsible for efficient network operations and implementation of new networks |
| network architecture | 网络结构 | Describes the structure of how a network is arranged and how resources are coordinated and shared |
| network gateway | 网关 | A device that allows one LAN to be linked to other LANs or to larger networks |
| network interface card (NIC) | 网卡 | LAN adapter card that connects the computer to a network |
| network operating system (NOS) | 网络操作系统 | Controls and coordinates network operations |
| node | 节点 | Any device that is connected to a network |
| optical carrier (OC) | 光学载波 | Very high-speed lines used by large corporations for all-digital transmission |
| packet | 数据包 | Small parts of messages |
| peer-to-peer (P2P) network | 点对点网络 | A type of network where each node has equal authority and can act as both client and server |
| personal area network (PAN) | 个人网络 | a type of wireless network that works within a very small area—your immediate surroundings, connect cell phones to headsets, keyboards to cell phones, and so on, make it possible for wireless devices to interact with each other. |
| protocol | 协议 | Rules for exchanging data between computers |
| proxy server | 代理服务器 | A computer through which all communications between the company’s internal networks and the outside world must pass |
| ring network | 环形网络 | Network in which each device is connected to two other devices, forming a ring There is no host computer, and messages are passed around the ring until they reach the correct destination |
| router | 路由器 | A node that forwards or routes data packets from one network to their destination in another network |
| satellite | 卫星 | A type of communication that uses satellites orbiting about 22,000 miles above the earth as microwave relay stations |
| satellite connection service | 卫星连接服务 | Use satellites to provide wireless connections, slower than DSL and cable, but available almost anywhere |
| server | 服务器 | A node that shares resources with other nodes |
| star network | 形状网络 | A number of small computers or peripheral devices are linked to a central unit |
| strategy | 传输策略 | A way of coordinating the sharing of information and resources |
| switch | 交换机 | A node that coordinates direct flow of data between other nodes |
| T1 | T1专线 | Special high-speed copper lines leased from telephone companies |
| T3 | T3专线 | Special line combined with T1 lines to form a higher capacity line |
| telephone line | 电话线 | A type of cable that uses 2, 4, or 8 pairs of copper wire |
| topology | 拓扑 | How a network is arranged or configured |
| transfer rate | 传输率 | The speed at which data can be transmitted |
| transmission control protocol/Internet protocol (TCP/IP) | 传输控制协议/互联网协议 | The standard protocol for the Internet |
| tree network | 树形网络 | A network topology where each device is connected to a central node, either directly or through one or more devices forming a treelike structure |
| Twisted-pair cable | 双绞线 | Cable consisting of pairs of copper wire that are twisted together |
| uplink | 上行链路 | Relates to sending data to a satellite |
| virtual private network (VPN) | 虚拟专用网络 | A security technology that creates a secure private connection between a remote user and an organization’s internal network |
| voiceband | 声带 | Used for standard telephone communication (see also low bandwidth) |
| wide area network (WAN) | 广域网 | A countrywide or worldwide network that spans distances greater than 100 miles |
| Wi-Fi (wireless fidelity) | 无线保真技术 | A wireless standard used to connect computers to each other and to the Internet using high-frequency radio signals to transmit data |
| WiMax (Worldwide Interoperability for Microwave Access) | 全球互通微波接入技术 | The technology used to extend Wi-Fi ranges over greater distances using microwave connections |
| wireless access point | 无线接入点 | All communications in a wireless network passes through a centrally located base station or wireless access point. |
| wireless LAN (WLAN) | 无线网络 | Local area network connecting computers and other devices using radio frequencies |
| wireless modem | 无线调制解调器 | A modem that is usually internal, but may be connected using USB or special card ports, also known as a WWAN modem |
| wireless wide area network (WWAN) modem | 无线区域网 | A modem that is usually internal, but may be connected using USB or special card ports, also known as a wireless modem |