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measured service Also known as USAGE SENSITIVE PRICING (USP). A local phone company method of pricing used to bill local phone calls. Measured service is often charged on the number of calls, the time of day, the distance traveled and the length of the call. See Local Measured Service.

measurement interval Tc (Time committed). A Frame Relay term defining the interval of time which the carrier uses to measure data rates that burst above the CIR (Committed Information Rate). See also Committed Information Rate.

meat puppet An online identity created solely to stuff a wiki or usenet ballot box. The term is an extension of sock puppet, a pseudonym created by a usenet member to second one's own opinion. See also sock puppet.

meatwagon A slang term for an ambulance.

Meatware People. See also Vaporware.

MEC Mobile ECommerce. See 36.

MECAB Multiple Exchange Carrier Access Billing.

MECAL Master Event Calendar.

mehrfrequenzverfahren German for tone dialing.

MELCAS Mercury Exchange Limited Channel Associated Signaling. A family of signaling techniques used by Mercury Communications Limited (MCL), a service provider in the U.K. MELCAS is used for signaling over E&M and FX trunks, for example. See also CAS, E&M, FX, and MCL.

MECCA Multiplex Engineering Control Center Activity.

mechanic A programmer.

mechanical equipment room A room serving the space needs for HVAC and other building systems other than telecommunications equipment. These are often special-purpose rooms.

mechanical hold A very basic line-holding mechanism used on simple two- and three-line phones that operated by placing a short circuit or a resistor across one phone line while talking on another. Chief disadvantage was that a call put on hold at one phone could not be taken off hold at another phone. Inexpensive multi-line phones with electronic holds largely replaced mechanical holds in the 1980s.

Mechanical Loop Test MLT. Also called Direct-Access Test Unit (DATU) added or built into a central office switch. With MLT a technician can execute tests for shorts, opens and grounds remotely. The technician gets a digital voice, enters a password and is given a series of options. The technician can get results as a digital recording or through an alphanumeric pager. MLT units can send a locating tone as TIP, RING or a combination of both. The unit can short lines and remove battery voltage for testing.

mechanical splice A splice in which conductors are spliced together mechanically. Copper conductors are mechanically spliced using connectors or clips that are crimped to join them. Glass optical fibers are mechanically spliced by being inserted into a plastic or metal splice loaded with index matching gel and then being crimped in place. Glass optical fibers also can be fusion spliced, i.e., melded together, which yields much improved performance. See also fusion splicing and index matching material.

mechanical strength Mechanical strength refers to the capacity of a network element to endure various physical forces. The term commonly is used with respect to transmission media such as coaxial cable, twisted pair, and optical fiber. Mechanical strength includes flex strength, tensile strength, break strength, and bend radius. See those terms for more detail.

mechanical stripping Removing the coating from a fiber using a tool similar to those used for removing insulation from wires.

Mechanized Calling Card Service MCCS was formerly known as ABC Service. MCCS is a central office switch feature that automatically bills credit card calls made on DDD (direct distance dial) rates without the involvement of an operator.

mechanized loop testing MLT. The system provides computer control of accurate and extensive loop testing functions in the customer contact, screening, testing, dispatch and closeout phases of trouble report handling. It also provides full diagnostic outputs instead of just pass/fail indications.

mechanized loop test MLT. A test system that tests the end user's loop, which is comprised of the wires and equipment used to provide dial tone/calling service to that end user.

mechatronics From MIT's Technology Review, "To improve everything from fuel economy to performance, automotive researchers are turning to 'mechatronics,' the integration of familiar mechanical systems with new electronic components and intelligent-software control. Take brakes. In the next five to 10 years, electromechanical actuators will

replace hydraulic cylinders; wires will replace brake fluid lines; and software will mediate between the driver's foot and the action that slows the car. And because lives will depend on such mechatronic systems, Rolf Isermann, an engineer at Darmstadt University of Technology in Darmstadt, Germany, is using software that can identify and correct for flaws in real time to make sure the technology functions impeccably. "There is a German word for it: gründlich," he says. "It means you do it really right." In order to do mechatronic braking right, Isermann's group is developing software that tracks data from three sensors: one detects the flow of electrical current to the brake actuator; a second tracks the actuator's position; and the third measures its clamping force. Isermann's software analyzes those numbers to detect faults—such as an increase in friction - and flashes a dashboard warning light, so the driver can get the car serviced before the fault leads to failure. "Everybody initially was worried about the safety of electronic devices. I think people are now becoming aware they are safer than mechanical ones," says Karl Hedrick, a mechanical engineer at the University of California, Berkeley. "A large part of the reason they are safer is you can build in fault diagnoses and fault tolerance."

MECOD Multiple Exchange Carriers Ordering and Design.

media In the context of telecommunications, media is most often the conduit or link that carries transmissions. Transport media include coaxial cable, copper wire, radio waves, waveguide and fiber.

media access control MAC. The real term is Medium Access Control. But some naughty people call it, incorrectly, Media Access Control. See Medium Access Control for a full explanation.

media access control convergence functions MCF. Media Access Control Convergence performs functions or processes which map information received from IEEE 802.2 Layer 2 LLC into a format acceptable to the lower layer medium.

media compatible Usually used to refer to floppy disk media. Even though two different computers (e.g. an AT&T PC 6300 and an Apple IIe) both use 5 1/4 inch floppy disks, the information recorded on them is recorded in a different format and thus, they are not media compatible. You can put one disk in another's machine. But it won't work. You'll get a dumb error message.

media filter A device used to convert the output signal from a token-ring adapter board to work with a specific type of wiring. For example, a media filter can link 16Mbps token-ring network interface cards with unshielded twisted-pair (UTP) wiring, thus saving the expense of additional cable runs.

media gateway A media gateway (also called media gateway controller) is a fancy name for the new "central office" of the new IP-based telecom industry. Think of it as third generation central office. The first generation was when all phone calls were analog and central offices were electromechanical. The central office's job was to connect one phone conversation through the network to the party at the other end. They called it circuit switched. And it was all very mechanical. Every conversation had a circuit dedicated to it while the conversation took place. The second generation occurred when the industry turned digital. At some point in its progress, each phone conversation was converted to a stream of 64,000 bits per second. The central office's function then became to draw out one digital conversation from a stream of many and connect that one conversation to the person at the other end. In this generation, the signals that controlled each conversation—told it where to go, whom to charge, etc.—were now carried in a separate network, called SS7 (Signaling System 7). In the 1990s, the world changed again. The Internet appeared, first as a way of joining University computers, then as an crude email system, then the world wide web took hold and everything Internet exploded. And the Internet got bigger than the traditional Public Switched Telephone Network (PSTN). The Internet is a very different animal to the phone network. It's packet switched. That makes it orders of magnitudes more efficient than the dedicated-circuit PSTN. As things you could explode on the Internet and as the price of doing them plummeted, the thought occurred to the traditional phone industry that it would make enormous sense if somehow the PSTN morphed into the Internet, gaining both the Internet's efficiencies and the PSTN's ubiquity. But to merge the two (or at least bits and pieces of the two), you needed a third generation "switch" that will handle all the various telecom streams—from packet switched IP (Internet Protocol) to traditional TDM (Time Division Multiplexed) streams and all those in between. The media gateway controlled is that switch. It's also called media gateway, a call agent or a softswitch, to reflect the fact that its switching is done in software, not in hardware as in previous switching generations.

Telecom carriers of all ilk use softswitches to support converged communications services by integrating SS7 telephone signaling with packet networks. Using network proces-

sors at its core, softswitches can support IP, DSL, ATM and frame relay in the same unit. According to the International Softswitch Consortium, a softswitch should be able to (1) control connection services for a media gateway and/or native IP endpoints, (2) select processes that can be applied to a call, (3) provide routing for a call within the network based on signaling and customer database information, (4) transfer control of the call to another network element, and (5) interface to and support management functions such as provisioning, fault, billing, etc. The switching technology in a softswitch is in software (hence its name) rather than in the hardware as with traditional switching center technology. This software programmability allows it to support existing and future IP telephony protocols (H.323, SIP, MEGACO, etc.). See also media gateway control protocol and softswitch.

Media Gateway Control Protocol First please read the definition for media gateway, then return to this definition. The media gateway control protocol (MGCP) is a protocol for the control of Voice over IP (VoIP) calls by external call-control elements known as media gateway controllers (MGCs), Softswitches, or call agents (CAs). Media Gateway Control Protocol (MGCP), also known as H.248 and Megaco, is a standard protocol for handling the signaling and session management needed for managing telecom "conversations" in different formats. The protocol defines a means of communication between a media gateway, which converts data from the format required for a circuit-switched network to that required for a packet-switched network. MGCP can be used to set up, maintain, and terminate calls between multiple endpoints. Megaco and H.248 refer to an enhanced version of MGCP. The MGCP standard is endorsed by the Internet Engineering Task Force (IETF) as Megaco (RFC 3015) and by the Telecommunication Standardization Sector of the International Telecommunications Union (ITU-T) as Recommendation H.248. H.323, an earlier ITU-T protocol, was used for local area networks (LANs), but was not capable of scaling to larger public networks. The MGCP and Megaco/H.248 model removes the signaling control from the gateway and puts it in a media gateway controller, which can then control multiple gateways. MGCP was itself created from two other protocols, Internet Protocol Device Control (IPDC) and Simple Gateway Control Protocol (SGCP). Defined in RFC 2705, the MGCP specifies a protocol at the Application layer level that uses a master-slave model, in which the media gateway controller is the master. MGCP makes it possible for the controller to determine the location of each communication endpoint and its media capabilities so that a level of service can be chosen for all participants. The later Megaco/H.248 version of MGCP supports more ports per gateway, as well as multiple gateways, and support for time-division multiplexing (TDM) and asynchronous transfer mode (ATM) communication. See also DOSA, Media Gateway, Megaco, Simple Gateway Control Protocol, and softswitch.

media hub A fancy name for a server which doles out audio, video and photographs to various devices around the house. The idea is the media hub will be connected to the Internet, so it can download movies, songs, photographs, magazines and newspapers for viewing, reading and listening to all around the house.

media independent interface MII. A part of the Fast Ethernet specification. The MII replaces 10Base-T Ethernet's Attachment Unit Interface (AUI), and is used to connect the MAC layer to the physical layer. The MII establishes a single interface for the three 100Base-T media specifications (100Base-TX, 100Base-T4, and 100Base-FX).

media interface connector An optical fiber connector which links the fiber media to the FDDI node or another cable.

media path Same as wire run. The means by which telephone signals are conveyed from the Network Interface Jack to the Communications Outlet.

media processing The processing of transactions during a telephone call; these transaction may include fax operations, speech recognition and synthesis, Touch Tone recognition, voice and fax store-and-forward messaging, and the conversion of messages from one format to another (such as from text to voice, or fax to text).

The DM/V-A multifunction and resource series boards provide up to 120 channels of continuous speech processing, conferencing, or other media processing features such as:

- silence compressed record
- message storage using G.711E-law or A-law pulse code modulation (PCM) or OKI adaptive differential pulse code modulation (ADPCM)
- compressed recordings using True Speech, GSM, and G.726 low-bit rate coders
- automatic gain control (AGC) to automatically adjust the signal level of incoming calls
- application's ability to dynamically switch sampling rate and coding method to optimize data storage and voice quality

- sampling rates and coding methods that are selectable on a channel-by-channel basis
- dynamic adjustment of playback volume
- detect dual-tone multifrequency (DTMF) to control record and play functions
- local echo cancellation techniques to improve DTMF cut-through and talk off/play off
- voice player and recorder resources are linked with the DTMF
- 240 channels of basic voice and up to 1200 ports in the system

media processor A special microprocessor whose job is to perform processing for multimedia devices, e.g. videophones, audio, computer telephony devices, voice recognition and 3-D, while the computer's main microprocessor (e.g. a Pentium) handled the basic processing and input/output (I/O) processing. Such media processors might have all the characteristics of digital signal processors and then some. See also MMX.

media server 1. A media server is a fancy name for a file server on a network which contains files containing voice, images, pictures, video, etc. In short, a media server is a repository for media of all types. Basically they're called media servers because they serve up media to anyone who asks for it, is on the network and is authorized to get it. Media servers are also called file servers.

2. The IP telephony community refers to a media server as a slave IP call processing and handling device. Several companies make a combination hardware/software tool which, among other things, collects digits, plays announcements, and establishes IVRs (interactive voice response).

media service instance A logical server providing access to media services (e.g., accessing a datastream, sending and receiving faxes, playing & recording sounds, engaging other VRU services) that can be associated with a call through a Media Access Device. See MediaStreamID.

media stream The information content carried on a call—that is, what actually is transmitted and received over the line, and can, with the necessary hardware, be read and written by a media stream API.

media StreamID Allows an association to be established between a given call and Media Services available on a Media Service Instance that can be associated with the call through a Media Access Device. See Media Service Instance.

media type A call's media type describes what type of information the call is carrying, such as data or voice. A computing domain can use this information, for example, to route the call to a more appropriate computing domain, such as a data computing domain for an informing data call.

median The average and the mean are the same. What's different is the median. If you say the median price earnings ratio of the S&P 500 was 15.9, that means that half of all stocks traded below that valuation and the other half traded above it. See Mean for a full explanation.

mediated access A Verizon definition. Mediated access allows CLECs to use Verizon network facilities, switches, and operating systems while prohibiting access to proprietary Verizon databases.

mediation system A wireless telecommunications term. A mediation system provides for three functions for transporting data from one device to another. These include protocol conversion, message routing, and store-and-forward processing.

Medial Implant Communications Service MICS. See Personal Radio Services.

medium 1. The material on which data is recorded; for example, magnetic type, diskette;

2. Any material substance that is, or can be, used for the propagation of signals, usually in the form of modulated radio, light, or acoustic waves, from one point to another, such as optical fiber, cable, wire, dielectric slab, water, air, or free space.

medium access control MAC. The IEEE sublayer in a LAN (Local Area Network) which controls access to the shared medium by LAN-attached devices. In the context of the OSI Reference Model, the MAC layer extends above to the Data Link Layer (Layer 2), and below to the Physical Layer (Layer 1). Within the MAC sublayer are defined Data Link Layer options which specify the basis on which devices access the shared medium, and the basis on which congestion control is exercised. Defined at the Physical Layer are media options such as UTP (Unshielded Twisted Pair) CAT 3, 4, and 5 (Categories of wire); STP (Shielded Twisted Pair); fiber optic cable; and wireless radio and infrared. Specific IEEE MAC standards are defined for LANs such as CSMA/CD (802.3), Token Passing Bus (802.4), Token Passing Ring (802.5), Metropolitan Area Networks (802.6), and Wireless LANs

(802.11). The MAC sublayer works in conjunction with the Logical Link Control Layer of the IEEE model; at this higher level are defined specific LLC conventions such as frame format and addressing.

medium attachment unit A device used in a data station to couple the data terminal equipment (DTE) to the transmission medium.

medium dependent interface MDI-X. The physical components of a network interface which handle the electrical or optical connection to a cable. This includes the connector, transceivers, and other physical layer components. MDI-X refers to a physical connection which includes an internal crossover of the transmit and receive signals. All standard repeater ports are MDI-X and are often marked with just an X by the port. Some repeater ports are changeable to a DTE port. In this case, the port is changed to a MDI port for connection to a MDI-X port on another repeater. An example of a DTE port is the connection on a NIC.

medium earth orbit MEO. Medium (or Middle) Earth Orbit satellites orbit the earth at distances between LEOs and GEOs (Low Earth Orbit satellites and Geosynchronous Earth Orbit satellites). Because MEOs operate at heights greater than LEOs, they have larger footprints, or areas of coverage, so that fewer satellites are needed to provide complete coverage over the earth. The planned Odyssey system, which will have 12 satellites, is one MEO with complete world coverage. See also LEO, MEO, GEO and Geosynchronous.

medium frequency MF. Radio frequencies from 300 KHz to 3000 KHz.

medium interface connector MIC. In LAN/MAN systems, the connector at the interface point between the bus interface unit and the terminal, termed the medium interface point.

MEE Multiplex Equipment Engineering.

meet-me conference A teleconferencing term. Meet-Me Conferencing is an arrangement by which you can dial a specific, pre-determined telephone number and security access code to join a conference with other participants. You are automatically connected to the conference through a conference bridge. Conference participants may call in at a preset time or may be directed to do so by a conference coordinator. Meet-Me Conferences may be set up through a teleconferencing service provider, generally with the capability to conference thousands of participants. It also can be provided through a phone system, such as a PBX, key system or hybrid. Some phone systems restrict this to intercom circuits only. In almost all phone systems there is a maximum number of parties that can be connected in such conference at one time.

meet-me intercom conference Dial a special number ("access code") and any telephone can join an intercom conference call.

meet-me page A feature which allows a person to answer an intercom page from any phone in the system.

meet point A location at which the facilities of two carriers connect.

meet-point billing MPB. The process whereby two or more local exchange carriers jointly provide to a third party the transport element of a Switched Exchange Access Service to a local exchange carrier end office switch. Under this process, each local exchange carrier receives an appropriate share of the transport element revenues, as defined by their effective Exchange Access tariffs.

meet-point billing traffic Refers to traffic that is subject to an effective Meet Point arrangement. Also see Meet-Point Billing.

meg A motionless electromagnetic generator is a device patented by Thomas Bearden (see www.cheniery.org) which extracts energy from the vacuum and converts it to electricity. This technology will be very important in the telecom industry for allowing devices to operate without using the national electric grid.

mega A prefix meaning one million, also represented as an M. A megabit equals one million bits, Megahertz equals one million cycles per second, but Megabyte equals 1,048,576 bytes. See also Megabyte.

megabit One million bits. See Bit.

megabits per second A measurement of speed indicating that one million bits of information travel past one point in the circuit in one second.

megabuck Channel surfing television one Saturday morning, I came across a program that purported to teach me how to hunt large male deer with large horns. The announcer was waxing enthusiastically on a piece of property in central Illinois which had many large male deer. He referred to it as "megabuck country." He showed a video of a large male deer and called it "the buck of a lifetime." The hunter, fortunately, missed his arrow shot at the deer, which lived to see another day and to start in another TV show. See also buck and pump and dump.

megabyte MB. A combination of the Greek "mega," meaning "large," and the English "bite," meaning "a small amount of food." A unit of measurement for physical data storage on some storage device—hard disk, optical disc, RAM memory, etc. The actual definition can be confusing, since there are two measurements. In the metric system, a megabyte is 1,000,000 bytes. In the computer world, things are measured in binary terms—1s and 0s. In binary terms, a megabyte is 2 to the 20th power, i.e., 1,048,576 bytes, which is the closest power of two to one million, i.e. 1024 x 1024. Another way of stating Megabyte is Kilobyte (KB) multiplied by 1,024. A megabyte can be either a decimal (metric) megabyte or a binary megabyte, depending on the context. A decimal megabyte also is called a "millionsbyte" or a "miobyte," and is used to describe capacity in newer ROM BIOS drives. Binary megabytes are used to describe capacity in DOS FSISK, Windows 3.x File Manager, and CMOS setup in older ROM BIOS drives.

Here is a summary of sizes:

MB = Megabyte (2 to the 20th power)

GB = Gigabyte (2 to the 30th power)

TB = Terabyte (2 to the 40th power)

PB = Petabyte (2 to the 50th power)

EB = Exabyte (2 to the 60th power)

ZB = Zettabyte (2 to the 70th power)

YB = Yottabyte (2 to the 80th power)

One googolbyte equals 2 to the 100th power.

Megaco Media Gateway Control. Designated by the ITU-T as H.248, Megaco is a low-level device protocol for interfacing the circuit-switched PSTN (Public Switched Telephone Network) with various packet networks, primarily in support of packet voice. Megaco is an evolution of MGCP (Media Gateway Control Protocol) that expands the range of packet network options to include ATM, in addition to IP-based networks, and that includes simplified provisions for signaling and control for conferencing applications, including voice conferencing and whiteboarding. Megaco links the Media Gateway (MG) and Media Gateway Controller (MGC) for intradomain remote control of connection-aware or session-aware devices, or endpoints. See also MGCP.

megaflops Million Floating point Operations Per Second. A measure of computing power usually associated with large computers. Mega means million. Also known as MFLOPS.

megahertz 1. MHz. A unit of frequency denoting one million Hz or one million cycles per second. See Bandwidth and Hertz.

2. What the Vermonters' Guide to Computer Lingo says you get when you're not careful downloading, which it defines as taking firewood off the pickup truck.

megalink Name for BellSouth's leased T-1 service.

megaplex Also known as a multiplex. A collection of different movie theaters in the same building, many playing different movies.

megaserver A large server. Possibly a Microsoft-created term. The idea is that people may keep much of their personal and professional information on large servers. The concept is that a person will be able to tap into a large central database via the Web to get e-mail, personal schedules, news, weather updates and other information anywhere, anytime. See Server.

megastream British Telecom's brand name for a service of 30 64-Kbps channels (i.e. E-1).

mege Mine eyes glazeth over. It happens when the instructor gets very boring in his lecture and his audience is just about to fall asleep.

megohm A resistance of 1,000,000 ohms. See Ohm.

memenuked Sudden and overwhelming media attention generated when an idea takes off globally. After he coined the term warchalking, London Web designer Matt Jones apologized for not keeping up with his blog "due to festivities arranged before my life got memenuked." This definition came from Wired Magazine.

memex In the 1930s, Vannevar Bush first wrote of the memex—a pocket device that sounds very much like a wireless Palm—in the 1930s. It didn't gain much attention until his seminal 1945 article, "As We May Think," published in the Atlantic Monthly. Here are his words from the article.

"Consider a future device for individual use, which is a sort of mechanized private file and library. It needs a name, and, to coin one at random, 'memex' will do. A memex is a device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory. It consists of a desk, and while it can pre-

sumably be operated from a distance, it is primarily the piece of furniture at which he works. On the top are slanting translucent screens, on which material can be projected for convenient reading. There is a keyboard, and sets of buttons and levers. Otherwise it looks like an ordinary desk. In one end is the stored material. The matter of bulk is well taken care of by improved microfilm. Only a small part of the interior of the memex is devoted to storage, the rest to mechanism. Yet if the user inserted 5000 pages of material a day it would take him hundreds of years to fill the repository, so he can be profligate and enter material freely. Most of the memex contents are purchased on microfilm ready for insertion. Books of all sorts, pictures, current periodicals, newspapers, are thus obtained and dropped into place. Business correspondence takes the same path. And there is provision for direct entry. On the top of the memex is a transparent platen. On this are placed long-hand notes, photographs, memoranda, all sorts of things. When one is in place, the depression of a lever causes it to be photographed onto the next blank space in a section of the memex film, dry photography being employed. There is, of course, provision for consultation of the record by the usual scheme of indexing. If the user wishes to consult a certain book, he taps its code on the keyboard, and the title page of the book promptly appears before him, projected onto one of his viewing positions. Frequently-used codes are mnemonic, so that he seldom consults his code book; but when he does, a single tap of a key projects it for his use. Moreover, he has supplemental levers. On deflecting one of these levers to the right he runs through the book before him, each page in turn being projected at a speed which just allows a recognizing glance at each. If he deflects it further to the right, he steps through the book 10 pages at a time; still further at 100 pages at a time. Deflection to the left gives him the same control backwards." See also Internet.

memo 1. A telephone feature that enables the user to store a phone number for calling in the future. For example, while speaking to a Directory Assistance operator, you can put the number she gives you into memory, and then call that number by pushing one or two buttons.

2. A call center term. A free form field used to store descriptive text or comments. The information in a memo field can be of any length and type.

Memorandum of Understanding See MOU.

memory The part of a computer or sophisticated phone system which stores information or instructions for use. Memory comes in many variations. There is memory which is lost when the power is switched off. There is memory which is retained when power is turned off.

memory administration MA. A set of functions that provide network system database updates, network system database integrity, network system database security and network system database backup and restoration. Definition from Bellcore (now Telcordia) in reference to its concept of the Advanced Intelligent Network.

memory board An add-on board designed to increase a computer's RAM.

memory caching A technology for increasing hardware performance by storing frequently used sequences of instructions in a memory cache separate from the computer's main memory where they can be more quickly accessed by the CPU.

memory call service A family of central office based voice messaging services from BellSouth.

memory cards The memory card is a bunch of memory chips crammed into a small plastic cartridge about the size of a credit card and about three times the thickness. It is used in several palmtop computers. As this dictionary was being written, we were awaiting the release of a 16 megabyte memory card. In contrast to flash memory, a memory card requires small batteries, typically the same ones as used in watches. See Smart Card.

memory effect The gradual shorting of a battery's useful life, caused by recharging before the battery is completely discharged. This is a real problem with nickel cadmium batteries, less of a problem with Nickel Hydride and even less of a problem with Lithium ion batteries.

memory interface A PCMCIA definition. The memory interface is the default interface after power up, PCMCIA Hard Reset and PCMCIA Soft Reset for both PCMCIA cards and sockets. This interface supports memory operations as defined in PCMCIA Release 1.0 and later and is used by both Memory Cards and I/O Cards.

memory leak In order to run, a computer program requests chunks of memory from the operating system for itself and for the data it needs. As the program runs, it may make additional requests for memory. If the program is well-written and, therefore, well-behaved, that memory will be explicitly released when the program is closed. A badly written program or a badly written operating system may not release that memory, leaving it in an unusable condition. This may be especially true if the program crashes (i.e., ends unex-

pectedly); which is common in poorly-written software. This phenomenon is known as a "memory leak," and it's not a good thing. The longer the software runs on your computer, the more and more of your computer memory it uses, and places in an unusable state. Eventually it uses up so much of your RAM memory, it starts using space on your hard drive. Soon, it runs out of hard disk space. Eventually your whole machine freezes. You are forced to reboot, losing all unsaved data in the process. There are two solutions: The first and most obvious is to reboot your computer, i.e. turn it off, wait ten seconds, then turn it on again. Some operating systems handle memory leak much better than others. Windows 2000 and Windows XP handle it much than Windows 95 and 98. There is another solution. See Garbage Collection.

memory map An indication of what type of data is stored where in a computer's RAM memory.

memory moments See Senior Moment.

memory protection The structuring of memory resources in Novell's NetWare 4.0 that guards the NetWare server memory from corruption by NLMs. Memory protection allows you to run NLMs in a separate memory domain called the OS PROTECTED domain. Once you determine the NLM to be safe, you can load it into the OS domain, where it can run most efficiently.

memory reserve power The operating voltage, generally provided by a battery, which supplies power to the memory modules when your commercial power fails. You should check your memory reserve power before it's too late. You should test it even when you don't need it.

memory technology driver A PCMCIA card definition. A memory technology driver is a memory device specific software that interfaces to Card Services to mask the details of accessing different memory technologies.

MEMS See MicroElectroMechanical System.

MEN See Metro Ethernet Network.

menu Options displayed on a computer terminal screen or spoken by a voice processing system. The user can choose what he wants done by simply choosing a menu option—either typing it on the computer keyboard, hitting a touchtone on his phone or speaking a word or two. There are basically two ways of organizing computer or voice processing software—menu-driven and non-menu driven. Menu-driven programs are easier to use but they can only present as many options as can be reasonably crammed on a screen or spoken in a few seconds. Non-menu driven screens allow more alternatives but are much more complex and frightening. It's the difference between receiving a bland "A" or "C" prompt on the screen—as in MS-DOS and receiving a menu of "Press A if you want Word Processing," "Press B if you want Spread Sheet," etc. It's very easy to write menus in MS-DOS using BATCH files. See also Audio Menus and Prompts.

menu bar call center term. The part of the menu system visible as a single row across the top of the display.

MEO Middle (or Medium) Earth Orbiting satellite. MEOs operate much like LEOs (Low Earth Orbiting satellites systems), although in slightly higher orbits. MEOs generally operate at an altitude of around 10,000 kilometers. Continuous global communications services can be achieved with six to 12 satellites. MEOs are capable of supporting both voice and data services. Contrast with GEO, Geosynchronous and LEO. See also Medium Earth Orbit.

MEP Multiplex Equipment Provisioning.

Merced Merced is a 64-bit multipich module jointly developed by Intel with Hewlett-Packard Co. It extends the Intel architecture in both raw speed (one version will reach 600-MHz) and overall performance. Merced will be followed by the two-chip processor called Flagstaff in the year 2000. Flagstaff chips will be the first built using a process that creates much smaller 0.18-micron-wide circuits, which will enable Intel to build smaller and faster chips in greater volume. There will be two versions of Flagstaff, with a choice of 4 Mbytes or 8 Mbytes of secondary cache, according to writer, Tom Davey.

merchant silicon Merchant Silicon is a special microprocessor chip, which is a non-ASIC, commercially available semiconductor chip.

mercury-wetted relay A relay or switch in which the movable contact of the device makes contact with a pool of mercury. Before solid-state devices, this was common technology for switching dry circuits. See also Dry Contact.

merging traffic The telecommunications, cable, consumer electronic and media conglomerates all vying for access to the same markets. See Siliwood.

meridian A Northern Telecom (now called Nortel) name for a family of PBXs.

Meridian Link Meridian Link from Northern Telecom enables Meridian 1

M

explosion or the September 11, 2001 attack on the World Trade Center, various government authorities need to get access to communications facilities, like cell phone bandwidth. Unfortunately, when a disaster happens everybody and their uncle jumps onto their cell phones and everybody promptly gets fast busy signals—including the important emergency people. So the concept of priority access methods is to figure a way of returning a fast busy to normal cell phones, while allowing the important people to get through, i.e. to get priority access.

priority bumping The process during a link, trunk or facility failure where lower priority user access to network services is interrupted in order to offer those services or bandwidth to a pre designated higher priority user.

priority call 1. Emergency calls to the attendant bypass the normal queue and alert the attendant with some special signal.

2. The name of a Bell Atlantic service. While all callers are important, some are more critical to your business. So give your high-priority callers a ring of their own with Priority Call. Simply use your phone to program up to six callers' numbers. When any of these people call, you'll know right away because you'll hear a different ring. If you have Call Waiting, you'll hear a Priority "beep" when you're on the phone. This way, you'll only have to interrupt your work to take priority calls.

3. This PBX feature allows an urgent intercom voice call to be made when the called telephone is busy or has Do Not Disturb activated. Priority Call should not be made available to everyone, and should be selectively programmed.

priority indicator A character or group of characters which determine the position in queue of the message in relation to the urgency of other messages. Priority indicators control the order in which messages are to be delivered.

priority ringing A name for a Pacific Bell (and possibly other local telephone companies') service which alerts you to have calls from selected numbers ring at another number.

priority transport The capability of a network for certain classes of traffic to have priority over others and thus have lower delay or otherwise better performance.

priority trunk queuing Through user-chosen trunk access level, this PBX feature places any caller with this or higher level in the class of service assignment ahead of callers waiting for the same trunk group (or Agent Group in the case of incoming ACD calls).

privacy Privacy usually means that once a caller "seizes" a line, no other user can access that same line even though it appears on his/her key set. Privacy can be automatic or selected for each call.

privacy and privacy release All other extensions of a line are unable to enter a conversation in progress unless the initiating telephone releases the feature.

privacy compromise A network security term. A scenario in which a malicious user is able to gain access to personal or confidential information about another user.

Privacy Enhanced Mail PEM. An Internet electronic mail capability which provides confidentiality and message integrity using various encryption methods.

privacy lockout Privacy automatically splits the connection whenever an attendant would otherwise be included on the call, i.e. the attendant can't listen in to a call she's just extended to someone. A tone warning is generated when the attendant bridges into a conversation in progress.

privacy override Activation of a special pushbutton allows the phone user to access a given busy line, even though the automatic exclusion facility is being used by the station on that line. This privilege of Privacy Override is usually only given to Big Bosses.

private ATM address A twenty-byte address used to identify an ATM connection termination point.

Private Automatic Branch Exchange PABX. A private telephone switch for a business or an organization in which people have to dial "9" to access a local line. In the old days, private branch exchanges were manual, meaning that operators/attendants were needed to manually place calls. Then the systems improved and you were able to dial the outside world from your extension without the help (or hindrance?) of an operator. Thus they became known as private automatic branch exchanges. But then all PBXs became Automatic. So these days, PABXs are all called PBXs, except in some countries outside North America, where they're still called PABXs. See also the next definition and PBX.

Private Branch Exchange PBX. Term used now interchangeably with PABX. PBX is a private telephone switching system, usually located on a customer's premises with an attendant console. It is connected to a common group of lines from one or more central offices to provide service to a number of individual phones, such as in a hotel, business or government office. For the biggest definition, see PBX. See also PABX.

private carrier An entity licensed in private services and authorized to provide communications service to others for money.

private dial-in ports A packet network term. For customers who have many calls, the packet network operator provides dedicated, unpublished phone numbers. The idea is to give the preferred user better service.

private domain name A standard attribute of an O/R (Originator/Recipient) Address that identifies a PRMD (Private Management Domain) generally relative to an ADMD (Administrative management Domain). An X.400 term.

private equity fund A bunch of people and organizations pool their money and hire a manager or team of managers, who invest the money, buying various private businesses and listed equities. The managers typically get paid a percentage of the monies managed and perhaps a reward should certain profit goals be reached. Private equity funds typically have a life of five to seven years at which point the investments are typically sold and the monies distributed to the owners, i.e. the people and organizations who put their money in the first place. Hopefully, there's a profit in the long-term. See also Hedge Fund and Mutual Fund.

Private Exchange PX. A telephone switch serving a particular organization and having no means of connection with a public exchange. In other words, a phone system just for intercom calls.

private eye Around 1925, the Pinkerton Detective Agency adopted "We Never Sleep" as its motto. To symbolize this, the motto was shown over the picture of an open, ever-awakeful eye. The popularization of this emblem led to private detectives being called "private eyes."

private facility trunk A telephone company AIN term. A transmission facility that carries non-public switched telephone network (PST) traffic. An example of a private facility trunk is an access arrangement to a switch supporting PBXs, including the switched end of a Foreign Exchange (FX) and an Off Network Access Line (ONAL).

Private Internet eXchange PIX. It's a Cisco term for a family of their remote access routers with firewall capabilities.

private key In asymmetric key cryptography, the private key is the key that must not be divulged to others. Private key encryption requires that the decrypting key be kept secret. Also known as single-key and secret-key. See Public Key Encryption and Encryption for more detail.

private leased circuit A leased communications circuit, available 24 hours a day, 7 days a week, that connects a company's premises with a remote site.

private line 1. A direct circuit or channel specifically dedicated to the use of an end user organization for the purpose of directly connecting two or more sites in a multisite enterprise. A private line that connects two points together is known as point-to-point; a private line that connects one point to multiple points is known as point-to-multipoint. Private lines are leased from one or more carriers, which may be local or interexchange in nature. Private lines provide connectivity on a non-switched basis. As they bypass the network switches, private lines use the various switching centers (e.g., Central Offices, or COs) only as wire centers for the interconnection of circuits. Thereby, private lines provide full-time and immediate availability, eliminating dialup delays and avoiding any potential for congestion in the core of the carrier networks.

Private lines offer highly available connectivity, as they are dedicated to the use of a single organization, which may run any type or combination of traffic types over them. As private lines are priced based on distance and bandwidth, with no usage-sensitive cost element, they can be used constantly and at maximum capacity at the same cost as if they were never used at all. Therefore, they offer a highly cost-effective to usage-sensitive, switched services in environments where communications between sites is frequent and intense. Originally, private lines were, in fact, dedicated circuits which literally could be physically traced through the network. They also were known as "nailed-up circuits," as telephone company technicians hung the physically distinct circuits on nails driven into the walls of the central offices. Contemporary private lines actually involve dedicated channel capacity provided through the core of the carrier networks over high-capacity, multi-channel transmission facilities. The access portions (i.e., the local loop portions) of the private line are, of course, dedicated and physically distinct circuits.

Private lines are agnostic with respect to the form of the data, and the nature of the application. They can support voice, data, video, facsimile, or multimedia communications. They can run at rates of T-1, NxT-1, T-3, OC-3, or any other technically feasible speed. They can support any communications protocol, or combination of protocols, including TCP/IP, Frame Relay, or ATM. See also Private Network.

2. An outside telephone line, with a separate telephone number, which is separate from the PBX. The line is a standard business line which goes around the PBX. It connects the user directly with the LEC central office, rather than going through the PBX. Private line connections are considered to be very "private" by virtue of the fact that it is not possible for a third party (e.g., technician or console attendant) to listen to conversations without placing a physical tap on the circuit. Additionally, private lines are not subject to congestion in the PBX. As private lines also are not susceptible to catastrophic PBX failure, they often are used to provide fail-safe communications to key individuals with mission-critical responsibilities in data centers, network operations centers, and the like.

private line service An outside telephone number separate from the PBX, can be set up to appear on one of the buttons of a key telephone. Also called an Auxiliary Line. See also Private Line.

Private Management Domain PRMD. An X.400 electronic mail term: A private domain to which MTAs (Message Transfer Agents) send mail. PRMDs are connected to ADMs (Administrative Management Domains) for message routing over wide area links. Under X.400 addressing, the PRMD represents a private electronic messaging system that may be connected to an Administrative Management Domain. The PRMD is usually a corporate or government agency email system connected to an ADM.

private message A message designation which prevents that message from being given to another mailbox.

private network 1. A network built and owned by an end user organization. Some very large organizations build their own private microwave networks, rather than rely on circuits leased from carriers. This generally is the case where a number of remote sites must be networked, especially where substantial bandwidth is required. In such situations, the public carriers may be unable to provide the necessary bandwidth and network performance.

2. A network comprising dedicated circuits leased from one or more public carriers. Such circuits make use of private lines over carrier transmission facilities, bypassing the switches. Many large organizations deployed complex, dedicated T-carrier networks in the 1970s and 1980s. While such networks continue to be supplemented and while such networks continue to be deployed for data communications, VPNs (Virtual Private Networks) generally are preferred for voice communications. A variety of VPN technology alternatives also exist for data communications. See also Private Line, Private Voiceband Network, and VPN.

Private Network-to-Network Interface See PNNI.

private networks marketing A Northern Telecom term which defines their organization for making and selling all telecom switches, except central offices. These products include the Meridian 1 PBX family, residential and business telephone sets, including Norstar and data communications.

private peering point A privately-owned packet-switching center at which ISPs exchange traffic, avoiding the cost of doing so through the more traditional NAPs (Network Access Points). See Peering for a more thorough explanation.

private subscriber network A virtual private network service supported by Public Packet Switched Service (PPSS) and incorporating interLATA transmission facilities owned or leased by the customer for private traffic. A Bellcore definition.

Private System Identifier PSID. A signaling identifier sent from a private cell site associated with a Wireless Office Telecommunications System (WOTS). The cell phone display shows the name of the company, rather than the name of the carrier. The PSID is defined in IS-136. See also IS-136 and Wireless Office Telecommunications System.

private use network Two or more private line channels contracted for use by a customer and restricted for use by that customer only.

private voiceband network A network that is made up of voice band circuits, and sometimes switching arrangements, for the exclusive use of one customer. These networks can be nationwide in scope and typically serve large corporations or government agencies.

private wire A private line. Derives its name from the old telegraph days when messages were carried on wires that strung across the nation.

privilege elevation A network security term. The ability of a user to gain unauthorized privileges on a machine or network. An example of privilege elevation would be an unprivileged user who could contrive a way to be added to the Administrator's group.

privileges The access rights to a directory, file or program over a local area network. Typically read, write, delete, create and execute.

PRI See Preferred Roaming List.

PRMD Private Management Domain. An X.400 Message Handling System private organization mail system. Example: NASAmal.

PRNG A Bluetooth term. Pseudo Random Noise Generation.

pro forma Pro forma is a financial term. It is the presentation of data, such as a balance sheet or an income statement, where certain amounts are hypothetical. For example a pro forma balance sheet might show a debt issue that has been proposed but has not yet been consummated, or a pro forma income statement might reflect a merger that has not yet been completed. Pro forma can also mean deviating from established financial practices. Here's the history. In the late 1990s the Financial Accounting Standards Board suggested that software companies adopt an accounting practice it called 97-02. That was meant to assure that companies—some with pretty aggressive sales cultures—book revenue on shipped, or fully received wares, not just on orders. The SEC then looked at 97-02 and—with the laudable intention of providing investors with a standardized measuring stick for assessing company revenue across all industries—decided that the it was broadly applicable. So, early in 2000, the SEC propagated "Staff Accounting Bulletin 101," or SAB 101, which essentially made 97-02 the accounting standard for all publicly traded companies in the U.S. SAB 101 became mandatory as of the December quarter. But, the trouble is, some companies have very complicated business models, and many of them—along with some of their analysts and investors—simply don't believe that SAB 101 fairly reflects their business activities. Under SAB 101 accounting standards, a company has to wait until a contract is completely fulfilled before it can book proceeds from the contract as revenue. But some companies say software contracts, for instance, sometimes take years to fulfill, because they often include customization, service agreements, product updates and other over-time add-ons. Companies, given pressure to meet or beat the Street's estimates, want to give investors a more dynamic picture of their quarterly business activity, especially when they honestly view the proceeds of orders as, well, money in bank, whether it has been received or not. In short, pro forma financial numbers can be basically whatever the company wishes to report. Share buyer, beware.

proactive Taking the initiative. Doing it before someone (most likely your competition) forces you to do it. The word is currently in vogue among those people who believe the telephone companies should do all the positive, forward-looking actions before the competitor does them and wins the customers and gets the public kudos. The word has no real meaning, but serves a purpose as a cry to action. The word actually is grammatically incorrect. The real word is "active." It is the opposite of "reactive."

proactive maintenance Proactive maintenance means fixing things before they're broken, or before they normally are fixed. The term is loose, but newly fashionable. I first learned this term when I read, "Through an aggressive proactive maintenance program, Cincinnati Bell Telephone (CBT) reduced its trouble reports to less than 1.5 per 1,000 customers per month, one-third less than the aggregate Regional Bell Operating Company (RBOC) average. The company has also achieved substantial cost savings by fixing cable problems in bulk before the customer notices them, rather than one at a time after the problem is reported. The company says that its proactive maintenance group cleared over 30,000 pairs last year at a cost of about \$1.4 million; compared to the \$5.2 million it would have cost to fix them on individual dispatch runs. Proactive maintenance methods are now being used by all five RBOCs, but many industry observers point to CBT as the pacesetter in this area. CBT is one of the largest of the country's 1,200 independent operating companies (IOCs), incumbent local exchange carriers (ILECs) that are independent of the RBOCs."

probability theory Probability theory studies the possible outcomes of given events together with their relative likelihoods and distributions. Probability deals with predicting the likelihood of future events. Probability theory is important in picking stocks.

probe 1. A sensing device, typically about the size and shape of a pencil, that is used to sense various physical conditions such as temperature, humidity, current flow, speed. Usually connected to a meter or oscilloscope which displays the condition being monitored.

2. An empty message that is sent to reach a particular address to determine if an address can be reached.

probe envelope In X.400, the envelope that encloses a probe in the MTS (Message Transfer System). See Probe.

Problem Tracking Report PTR. A report maintained by a manufacturer in its Problem Tracking Database that describes a specific reproducible product defect or anomaly with a product. A PTR is also used to document a request for a feature enhancement. Information includes PTR number, problem description, PTR priority, system configuration and steps for reproducing the problem.

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Harry Newton has 36 years studying, writing, lecturing and investing in telecommunications and information technologies. He founded key telecom magazines—*LAN* (now *IT Architecture*), *Teleconnect*, *Call Center*, *Computer Telephony* and *Technology Investor*. He also founded the enormously successful trade shows Computer Telephony Conference and Exhibition (CT Expo) and Call Center Demo. He sold his publishing and trade show company in September, 1997 to concentrate on writing and technology investing.

Newton has an MBA from the Harvard Business School and an Economics degree from the University of Sydney, Australia, where he was born. He wrote this dictionary to teach himself his first loves—telecom and technology. He is not an engineer, but wishes he were. He wrote this dictionary in non-technical, business language. He believes (perhaps naively) that anyone in business should be able to understand complex technical terms, even though they're not an engineer. Some of his definitions are short. Some are long. His objective is to explain what the technology means, what it does, what its benefits are, and what its pitfalls are.

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