Glossary Of Terms For The

CTP Program

Version 2.2

Traditional Voice Communications Terms

Advanced Toll Free Routing:

A set of routing services provided by a carrier that will route toll free calls as defined by the routing service.

❑ *NPA-NXX Routing*   ❑ *Busy Ring Non Answer Routing*
❑ *Percent Allocation Routing* ❑ *Take-Back & Transfer Routing*
❑ *Time Of Day Routing*   ❑ *Emergency Routing*

Auto Attendant:

A function of the phone system sometimes referred to as a "Virtual Receptionist", which uses IVR technology to direct the caller to enter an extension or perform other functions with the "Virtual Receptionist".

Automated Call Distribution (ACD):

This is a phone system function that is performed by a specialized CPE that automates the distribution of incoming calls to single or groups of people. Generally used in a call center where the people are usually referred to as "agents".

Automatic Number Identification (ANI):

The term refers to the phone number of the originating caller, primarily used to track who is calling in a Toll Free environment. This information cannot be blocked since the recipient is paying for the call; they have the right to know who is calling.

Basic Rate Interface (BRI):

One of the standard delivery services of ISDN (the other being PRI described below). BRI is limited to 128K of contiguous bandwidth with two Bearer (B) channels at 64 Kbps and one Data (D) at 16 Kbps. The two B channels are for transport and the single D channel contains the set up data. The formula for BRI is: 2B+D.

Billing System:

This is the data base used by carriers to correlate contracted rates, track usage by clients and used to generate invoices.

BTN:

Business Telephone Number is the NPA-NXX-XXXX assigned to an end user or carrier client. It is the primary phone number associated with a customer, often uses as their main billing number.

Busy / Ring No Answer Routing:

Part of the Advanced Toll Free Routing family of services. This is the function of assigning a second facility or physical resource to answer calls if all lines are busy or a call goes unanswered.

Caller ID (CID):	Provides the receiving party the caller's phone number and name when available. This is different from ANI because the CID can be blocked for privacy.
Carrier POP:	The service provider's physical facility where the network connects with the local loop provider.
Centrex:	Also known as "Hosted PBX" services. The basic principle is a service provider (traditionally a LEC) owns the phone system and hosts it in a controlled data center off site from the client. The service provider charges a service fee for the client to access and use the system. The service is accessed through POTS lines.
Channelized T1 :	Is a T1 circuit that has been divided up into 24 channels. Each of these channels represents a single digital voice path (64Kbps).
Competitive Local Exchange Carrier (CLEC):	A Local Exchange Carrier that competes with the ILEC or a service provider that provides a competitive option to the ILEC in the same market.
Computer Telephony Integration (CTI):	This technology generally works side by side with an ACD and builds intelligence into the routing and dissemination of data along with the call. The common function is to have an agent answer the call while the screen populates specific data related to the caller automatically. This function is known as "Screen Pops".
Customer Premise Equipment (CPE):	This refers to the equipment located on the customer site that connects to the DMARC.
Direct Inward Dial (DID):	When a phone system has fewer lines than extensions, this function allows for direct dialing to an extension. The carrier provide more phone numbers than lines and sets up a logical path for the caller to connect directly to the extension without having to dial and extension. Can be set up on POTS lines, T1 or PRI configurations. DID's have to have equipment to provide the function installed on the premise site.
Dialed Number Identification Service (DNIS):	A feature for Toll Free services to eliminate the need for a 1 to 1 ratio of Toll Free number to lines. This will allow a set of digits to be assigned to a Toll Free number and will work with the CPE to direct the call to a person or group of extensions.
Emergency Routing:	Part of the Advanced Toll Free Routing family of services. If there is a natural disaster or local emergency, the calls can be re-directed to an alternate locations or resource.

Extensions:	The individual user phone that is connected to a phone system.
Hosted PBX:	The basic principle is a service provider own and operates a phone system and hosts it in a controlled Data Center off site from the client. The service provider charges a service fee for the client to access and use the system. The client accesses the service through a variety of access methods including T1, PRIs, Private Lines or POTS. The Internet is an access method to this as well, but falls into the category of VoIP and hosted VoIP services.
Hunt Group:	This is typical in a small office where there are multiple lines all pointed to the same CPE. It is a service provided by the LEC where if the first line in the group is used, the LEC will roll the call to the next line until there is a line available to take the call. IF all lines are in use, the caller will get a busy signal.
Hybrid Switches:	This refers to the CPE that is designed like as a PBX with limited functionality but less expensive that a full featured PBX.
Incumbent Local Exchange Carrier (ILEC):	The Local Exchange Carrier that provided service and physical facilities prior to the local services opening for competition.
IntraLATA:	Calls or other telecommunications services with both the originative and terminating ends in the same LATA.
InterLATA:	Calls or other telecommunications services that originate in one LATA and terminate in another LATA.
Interactive Voice Response (IVR):	Is a technology used in phone systems and other computer equipment that interacts with a person by touch tone responses or actual voice recognition commands.
International Direct Distance Dial (IDDD):	For many years this was the reference used to refer to all international dialing. This was introduced in the 1970s.
Key Switch:	Once an electromechanical system known for the lighted buttons on the bottom of each extension that handled multiple phone lines. Many of these switches were replaced by electronic systems in the mid to late 1980s.
LATA:	Local Access and Transport Area references the service area a telephone company serves. Post MFJ, it defined the type of calls that connected intraLATA or interLATA calls.
LD Call:	Refers to a Long Distance Call that go outside the LATAs and cross the local calling areas.

<u>LEC CO</u>:	Local Exchange Carrier Central Office.
<u>Local Loop</u>:	Also referred to as "Access" is the connection from the client site to the carrier, Central Office or POP.
<u>Local Exchange Carrier (LEC)</u>:	Local carriers that provide connections and provide last mile access to networks within a designated area.
<u>Local Number Portability (LNP)</u>:	Is the ability to transfer numbers assigned to the person or paying entity to another service provider. It is a number that is provided and by the LEC must reassign the number to another service provider upon the request of the person or paying entity.
<u>North American Dial Plan</u>:	Refers to the number plan used to dial within North America and uses the NPA-NXX-XXXX format.
<u>NPA-NXX</u>:	Refers to the North American Dialing Plan and the first 6 digits. The NPA refers to the area code of the connection the dialer is seeking to connect with. The NXX refers to the exchange and generally will refer to the Central Office connection.
<u>NPA-NXX Routing</u>:	Part of the Advanced Toll Free Routing family of services. This routing function is a service based on the ANI of the caller. This will allow for separate or even local call centers to handle calls from a specific area.
<u>Number Portability</u>:	Allows the person or paying entity to retain their number in the event they change carriers, services or in some cases location. The service provider must grant access to the numbers as they do not own the number.
<u>Percent Allocation Routing</u>:	Part of the Advanced Toll Free Routing family of services. If an organization has multiple call centers, the calls can be routed based on percentages to balance the flow of calls across all the centers.
<u>Plain Old Telephone Service (POTS)</u>:	The basic phone service supplied by standard single lines that connect the user to the PSTN.
<u>Point Of Presence (POP)</u>:	The physical place where a carrier has network access. The client connects to this by the "Access" provided by the carrier.
<u>Portability</u>:	Refer to: "Number Portability".
<u>Primary Interexchange Carrier (PIC)</u>:	The code assigned by the LEC to identify the LD carrier of choice by the customer.
<u>Primary Rate Interface (PRI)</u>:	ISDN version of a T1 trunk that connects the Central office to the client site. There are still 24 channels available, but in

this case, one channel is used for out-of-band signaling to set up and break down connections. The formula for a PRI is 23B + 1D. PRI can be used for voice only, data only or voice and data.

Private Branch Exchange (PBX):

This is a telephone system used in an office that provides multiple users with sophisticated intra location communications requirements and external.

Public Switched Telephone Network (PSTN):

Refers to the entire (not limited to a single carrier) local, long distance, international phone network used to connect traffic worldwide.

Responsible Organization (RespOrg):

The selected carrier that is responsible for obtaining Toll Free numbers from the Service Management System and tracking customer records.

Tandem Office:

Is a physical building owned and operated by the ILEC that serves as the switching center to connect COs when interoffice trunks are not available.

Take-Back & Transfer Routing:

Part of the Advanced Toll Free Routing family of services. In the event a call was completed to an agent in a call center, but it was then concluded that another person was needed to address the callers needs, the agent would be able to send the call through the network to another facility where the desired resource is then available.

TDM Voice:

Refers to Time Division Multiplexing Voice as the more traditional method of transporting voice as opposed to Voice Over IP.

Time Of Day Routing:

Part of the Advanced Toll Free Routing family of services. This will allow for "Follow The Sun" support. Meaning that if all the early day calls were routed to the east coast and end of day calls routed to the west, the company could keep better hours for the staff and have shorter days.

Toll Free Numbers:

Numbers designated to redirect the charges to the receiving party rather than the originating caller. Many refer to these as "800 Number", but that is not true anymore as there are multiple NPAs that reverse the changes (i.e. 888, 877& others).

Trunk Level 1 (T1):

Is a digital transmission link with a bandwidth of 1.544Mbps. This circuit is commonly used as access from the client site to the Central Office for data, internet, voice and other carrier services

VoIP Terms

Broadband Device:

This is CPE. It is a DSL Modem, Cable Modem or any access device provided by the ISP that hands of a broadband service for the Internet to the user.

Class Of Service (COS):

The practice of prioritizing and limiting various transmissions of data. In a packet network (i.e. the Internet), network managers will prioritize traffic based on the application. This is a critical function of MPLS where the network manager can assign a higher "Class" to voice over another application (i.e. e-mail).

Emergency Services 911:

This is a public service performed by the telephone industry in concert with emergency service organizations that ensure public safety. The objective was to make it easy for someone in trouble to dial a three digit number to connect to a resource that could help a person in need.

Enhanced 911:

Also known as E911. Is used to track the physical location of a phone since, with VoIP phones, the location can be different than the location information associated with the line.

Hosted VoIP:

A service provider owns and operates an IP Phone Switch and allows client access to use all the functions available to the users. The users access the service through the Internet and use either a standard SIP phone or an IP Phone provided by the service provider.

Internet:

Is a global interconnection of an infinite number of computers, access points, resources and information available to those that are able to access the network by whatever means they have available.

Internet Protocol:

Is part of the TCP/IP protocols used to track internet addresses, routes traffic and connect networks.

IP PBX:

Internet Protocol PBX specifically designed to connect phones to a LAN and transports voice via IP Packets over a network.

Internet Service Provider:

Is a vendor who provides Internet access to individuals and / or companies.

Jitter:

Is a term used to refer to the random audible pops or cracks herd on voice calls transmitted over the Internet. The core contributor to this is latency.

Latency:	The time elapsed between transmitting, receiving and retransmitting data through a network
PC:	In this case, it refers to a Personal Computer.
Private Network:	As used in the VoIP section, it is defined as a VPN and provides security controls around the transmissions between the end points.
Processing Delay:	Will contribute to latency on a network and refers to the increased time it takes to perform route lookup, changing packet headers or shaping the data to be transmitted.
Propagation Delay:	Will contribute to latency on a network and refers to the increased time it takes to transmit data through the chosen medium. It does not refer to any network congestion, therefore not effected by use on the network.
Quality of Service (QoS):	Refers to the clarity, volume levels, or choppiness in a call. It defines the user experience on a VoIP connection.
Softphone:	Is software that is installed on a Personal Computer or work station that will perform the functions of a physical phone. It requires broadband Internet access, an account or access to a VoIP network, a microphone and speakers / headset.
Session Initiation Protocol (SIP):	The most commonly used Protocol for voice over the Internet. It is known for its ease of use and simple set up for users. It can be used for other functions such as Video Conferencing, instant messaging, on-line gaming and other applications on the Internet.
Small Office Home Office (SOHO):	This term refers to the user community that works out of the house or a small office with one or two users.
Transmission Delay:	Will contribute to latency on a network and refers to the increased time it takes to transmit data through a packet network (i.e. the Internet) do to utilization or congestion on the network.
Voice over Internet Protocol (VoIP):	Seems to be the "catch all" phrase for transmitting voice services over a data network (i.e. the Internet). The function is completed not only on the Internet, but on private Intranets, corporate data networks and managed networks used by carriers.
Virtual Private Network (VPN):	There are a number of definitions, but in the case of using it with VoIP, it is communication path created over the Internet to pass secure transmissions between two or more points.

Carrier Access Terms

Access Network: Is the facility that provides direct access from the client DMARC to the carrier POP.

Business Continuity Plan (BCP):   This is a plan the client creates to have the ability to recover from network failures. Generally the level of redundant connections is driven by the budget and the impact on the business if a network element were to fail.

Category 5 Cable (Cat5 or Cat-5):   It was the most commonly used cable for inside wiring. It is made up of 4 twisted pair copper wires (a total of 8 wires) and comes as either shielded or unshielded.

Category 5 Cable Enhanced (Cat5e):   It is similar to Cat5 but able to support higher speeds. Cat5 had trouble with the higher speeds (i.e. Full 1 Gbps Ethernet) users experianced cross talk. These issues were resolved with Cat5e and has become the most common cable type.

Category 6 Cable (Cat6):   This was the standard cable intended to support 10 Gbps and is backward compatible with Cat5e to Cat 3.

Category 6 Cable Augmented (Cat6A):   This is similar to Cat6. Some user's experienced cross talk and errors at the 10 Gbps Ethernet level using Cat-6. This "Augmented" version has fixed the issue and effectively works with 10 Gbps Ethernet.

Carrier Access: The physical facility used to connect the client to access the service provider services.

Central Office (CO):   The physical facilities owned and operated by the local carrier that connects and completes the connections for voice, data and access to the Internet.

Coaxial Cable (Coax):   Single core of copper shielded by a protective layer and wrapped again by an insulating layer with a coated outside. Transmitting speeds are higher than Cat5e cabling.

Customer Provided Access: While not very common these days, the client has the option to provide their own access to the carrier. In this case, the carrier DMARC would actually be in the CO and the customer would be responsible for the management and repair of the Last Mile.

Demarcation Point (DMARC):   The point the local carrier providing the Last Mile ends and connects to the CPE.

Ethernet Handoff: Is when the carrier hands of an Ethernet port to the client to access the service. This is generally used in higher bandwidth applications.

Extended DMARC: It is common that the DEMARC is not in the same room as the CPE. This term refers to the connection required to complete the circuit. Generally is an extended cable that the

client will have to have pulled to connect the service to the CPE.

Last Mile: The point of the connection that connects the DMARC to the LEC or ILEC Central Office providing the Access Network.

Lit Building: Is a building that has facilities built that provide Carrier Access through the carrier's own facilities and not the traditional ILEC.

Local Loop: The physical connection between the client DMARC and the carrier service providers POP. This is typically provided by the LEC.

Loopback: A common diagnostic procedure of sending a electronic signal to the NIU (Smartjack) and ensure the circuit is clean between the CO and the client site.

Inside Wiring: Also referred to as Customer Premises Wiring (CPW). It is the wire that connects the Local Loop NIU to the CPE.

Local Loop Unbundled: The practice of sharing the local loop with multiple carriers. This is often referred to as Customer Provided Access.

Network Interface Unit (NIU):   Also referred to as a Network Interface Device (NID), it is the interface between the Local Loop and Inside Wiring. It is the DMARC.

Redundant Access: Is the practice of provisioning alternative access methods from the client site to the Carrier POP. This could be directed back to the LEC CO or any other point in the network.

Registered Jack 11 (RJ11):   Is a 6 conductor modular jack that generally has 4 wires. Commonly used for phones, fax machines or modems.

Registered Jack 45 (RJ45):   Is a 8 pin connector typically used to terminate Cat5, Cat 5e, Cat 6 and Cat6A cables, commonly used in LANs.

Registered Jack 48 (RJ48):   See "Smartjack".

Shielded Twisted Pair: Is a cable with two or more wires insulated with rubber or plastic, twisted and then covered with a thin foil to protect it from outside interference.

Smartjack: Is a type of NIU that provides additional intelligence so the service provider can trouble shoot with a Loopback test. Most commonly used for T1 installations. RJ-48 is a Smartjack.

Unshielded Twisted Pair (UTP):   Twisted pair cables that have rubber coating or plastic covering, but does not have a metal protective sheathing to protect form interference.

OSI Reference Model Terms

Code Conversion:
Is the process of converting code that come in from a one network into codes that can be recognized by another network.

Logical Link Control (LLC):
Is a protocol used in LANs to standardize the end system addressing, error checking and compliments the use of MAC.

Media Access Control (MAC):
Is a unique address for hardware in a network. It does not change.

Open System Interconnection (OSI):
Is the reference model that defines the layers of the process for network communications. It is also known as the OSI Reference Model, OSI Model or OSI RM.

OSI Layer 1:
Physical Layer - Defines and provides the mechanical, electrical or actual connections of signals transmitted throughout a network.

OSI Layer 2:
Data Link Layer - Provides the controls required for data to flow from Host Node to Receiving Node and detects / requests retransmissions of Bit Level Data with errors.

OSI Layer 3:
Network Layer - Provides "Intelligence" by determining how the data will be delivered from source node to the destination node.

OSI Layer 4:
Transport Layer - To control the connection to assure error-free data and cost efficient end to end data transfer.

OSI Layer 5:
Session Layer - To establish and maintain the connections between two systems.

OSI Layer 6:
Presentation Layer - This is the layer where the method of communicating is established.

OSI Layer 7:
Application Layer - This layer supports the end process and utilizes the application used by the user.

Service Access Points (SAP):
Is a logical address that allows a network to route data between a remote device and a LAN or WAN.

Telecommunications Convergence:
A term used to describe the integration of both voice and data networks into a single network to better utilize network facilities.

Signal System 7 Terms

Addressing: Refers to the process of defining the transmission route. This includes the user dialing a number on the phone.

Alerting: Is the act of indicating the arrival of an incoming call. Result includes a ring tone of some other audible or visual signal that there is a call.

Intelligent Network (IN):   Refers to a network that allows flexibility in routing or other functions based on modification controls that can be sent in either before or in parallel with the data.

Out-Of-Band Signaling: Is the control signaling that is transmitted on a separate channel that carries the "Intelligence" or data for an Intelligent Network.

Service Control Point: Part of the physical SS7 network. It is the actual database and directory that houses the intelligence in the network.

Service Switching Point (SSP):   Part of the physical SS7 network. This is the Central Office that has the SS7 Software and equipment that switches the calls.

Signal Transfer Point (STP):   Part of the physical SS7 network. Functionally moves messages from one signaling link to another.

Signal System Number 7 (SS7):   Replaced SS6 and is the system the world's PSTN uses to set up and tear down calls with added benefits to operational intelligence and function for end users.

Supervising: Is the responsibility of monitoring the status of a line or circuit to track if it is in use or idle.

Data Communication Concepts Terms

128-Bit Encryption: | Refers to the Encryption Key and it's the length being 128 Bits. This is generally accepted levels of encryption for acts such as HIPAA.

256-Bit Encryption: | Refers to the Encryption Key and it's the length being 256 Bits. This size of Encryption is over and above most requirements.

Asynchronous Communications: | Refers to the type of transmission known as "Start & Stop" communications and requires start and stop bits. This is unpredictable and bursty transmissions.

B8ZS: | Is a bit stuffing technique used to keep a channelized T1 from locking up. The technique uses 8 bits where 7 are for data and 1 bit is for timing.

Bit: | Originates from the term Binary Digit and refers to the smallest single component of Data, 1s and 0s.

Bit Rate: | Refers to the number of Bits transmitted per second. In digital transmission it is the same as Bandwidth or BPS.

Bursty Traffic: | Data Transmissions that have unpredictable periods of high volume separated by periods of low volume.

Byte: | Is a set of Bits that make up a value. It is the same as letters in a word. Words are made up of letters as Bytes are made up of Bits.

Carrier Maintenance Window: | A scheduled time when a carrier will conduct standard maintenance on the service provider network.

Channel Bank: | CPE that was commonly used to break up a Channelized T1 for a phone system that did not have the capability. Typically used with older analog switches or PBXs. Mostly phased out of the market at this point.

Channelize: | The process of subdividing a large circuit into smaller parts to allow for uninterrupted transmissions flow on a single circuit.

Channelized T1: | Is a Trunk Level 1 circuit that is broken up into 24 Channels. Each channel is 64Kbps.

Code-Division Multiplexing (CDM): | A multiplexing technique where bits are coded to a specific channel within the communication medium. Commonly used for wireless access.

Contiguous Bandwidth: | Is the process of taking multiple circuits or channels and combining the bandwidth to function as a continuous stream of data.

D4 Framing	A framing format used when a T1 interfaces a channel bank. This has all but phased out.
Data Compression:	The function of reducing the size of the data by eliminating unnecessary information.
Demodulation:	Is the process of converting the modulated analog signal back to its original digital form to be used by a digital device.
Digital Signal Level Circuits (DS-X):	A set of digital circuits assign a numeric value to represent the size of the circuit. The smallest version is a DS-0 (64Kbps) to DS-4 (274.176Mbps).
Encryption:	Is the process of making data unreadable with the use of algorithms to transmit data securely.
Encryption Key:	Is the known schemes to authenticate users and decrypt data that has been encrypted.
Error Detection:	The function of checking the integrity of the data and ensuring the data sent is correct. Most protocols will request error data to be resent. If done a lot it could slow down the performance of the circuit.
Fractional T1:	A channelized T1 that uses a subset of the available channels. It is usually used as access where the LEC will only charge for the channels used.
Full Duplex:	Is a two way communications transmission that can transmit both directions at the same time.
Half Duplex:	Is a two way communication transmission, but can only transmit one way at a time.
Header:	Is the control information for data sent in packets. It will define bit length and is attached in front of the data. When the packet arrives at the destination, the header is discarded so the data can flow as needed.
Inverse Multiplex (I-Mux):	Refers to taking two or more facilities or circuits and combining the signal to provide a single contiguous stream of bandwidth.
Metropolitan Area Network (MAN):	This term refers to any private network that all locations are within a defined metropolitan area for the purpose of transmitting voice or data.
Modem:	Refers to the device that modulates and demodulates digital signals that are carried on an analog facility.
Modulation:	Refers to the process of encoding a digital signal into an analog signal for the purpose of sending digital information on an analog facility.
Multiplex:	The term refers to transmitting multiple signals over a single facility or circuit.

Packet Network:	Is a network built on the concept that the transmissions include a header with control information and the data is sent in blocks.
Permanent Virtual Circuits (PVC):	Is a logical fixed path in a shared network that is established by a configuration between two endpoints that does not change.
Simplex:	Is a one way communication transmission that can only go in one direction.
Start Bit:	The bit sent at the beginning of the transmission to let the receiving end know the following bit is the data. This is used in asynchronous communications.
Stop Bit:	Is the bit sent at the end of the transmission to let the receiving end computer know that the transmission has completed. This is used in asynchronous communications.
Synchronous Communications:	Refers to the type of transmission that is based on timing or clocked groups of data that are sent. This is predictable transmissions, thus easier to manage.
Time-Division Multiplexing (TDM):	This is a multiplexing technique that uses timing of the data to create channels in the transmission to carry multiple transmissions at a time over a single circuit.
Variable Bit Rate (VBR):	A communication path that allows for bit rates to vary within defined limits as specified by statistically expressed parameters.
Voice Compression:	Is the process of reducing the bandwidth required to transmit voice digitally.
Wavelength-Division Multiplexing (WDM):	An optical multiplexing technique that manipulates the length of the wave to pass multiple signals over a single optical facility.
Wide Area Network (WAN):	This term refers to any private network (paid for by a user group) that extends outside a defined metropolitan area for the purpose of transmitting voice or data.

Optical Fiber Facilities Terms

Add / Drop Multiplexers (ADM):   A multiplexor used to break down (extracting or inserting) lower rate signals without having to de-mux an entire signal. Primary use is in an "In-Line" application (Multi-Point or Hub and Spoke circuit).

Bidirectional Line Switched Ring (BLSR):   One of two ring topologies of SONET. This ring topology does not duplicate the traffic before sending. Half of the data is sent one way and the second half the other on the ring.

Crosstalk: Is a type of inference that takes place when electromagnetic pulses leak from one copper wire to another. The standard remedy to this is to twist the pairs so the leakage does not get pick up by the other wires in a bundle.

Dense Wavelength Division Multiplexing (DWDM):   WDM was defined in the Data Communication Concepts section. This version increased the WDM throughput exponentially by incorporating TDM into the manipulation of wavelengths and color. This technology has enabled the development of SONET to evolve and keep up with demand.

Egress: Is the point at which data exits the network or the destination.

Fiber Distribution Data Interface (FDDI):   Is a LAN technology utilizing an optical fiber medium with a range of 124 miles, based on Token Ring and runs at the speed of 100Mbps.

Hub and Spoke SONET: This is a direct connection of SONET. This will take higher bandwidth point to point connections and break it down into sub-rate channels with the use of an ADM to establish the channels used by the number of NE using the service.

Ingress: Is the point at which data enters the network.

Network Element (NE):   Is the logical end point of a defined service because it refers to the facility or equipment used to provision service.

Point to Point SONET: This is a direct configuration of SONET where two strands of fiber complete the connection with one fiber going one way and the second going the other.

Synchronous Optical Networking (SONET):   Is a design standard for transmission speeds from 51.85 Meg to 40 Gig with the level of flexibility needed to support as many digital signals with various capabilities a possible all based on an optical infrastructure.

SONET Hierarchy: The list of the service class, speed and number of DS-1s it supports when channelized. Below is the Hierarchy.

Optical Carrier Hierarchy			
SONET Class	Speed	DS-X Capacity	
		DS-1s	DS-3s
OC-1	51.48 Mbps	28	1
OC-3	155.520 Mbps	84	3
OC-12	622.08 Mbps	336	12
OC-24	1.244 Gbps	672	24
OC-48	2.488 Gbps	1344	48
OC-192	9.953 Gbps	5,376	192
OC-768	40 Gbps	21,504	768

Token Ring: Is a circular structured network that inserts a supervisory frame or "token" to address the transmission. It is an easier infrastructure to add egress and ingress points and is used in LANs and SONET.

Unidirectional Path Switched Rings (UPSR):   One of two ring topologies of SONET. This ring topology sends redundant copies of the data in both directions from the ingress to the egress point and doubles the traffic transmission loads.

Microwave Communications Terms

Campus Connectivity:
Refers to a network that extends beyond the four walls of an office or single building and connects other buildings within a limited area. Examples of this would be a college or university where a collection of buildings situated on land owned by the company or institution.

High Frequency Radio:
This refers to frequencies higher than 30 GHz and is used in P2P microwave solutions.

Line Of Sight (LOS):
Is a direct path that is clear between two endpoints. It allows for a clean direct communication path to travel uninterrupted by trees, buildings or any other physical object.

Licensed Microwave:
Refers to the type of P2P wireless solutions that are registered with the FCC to ensure a specific frequency is committed to the service provider for use in a designed area.

Microwave Tower:
Refers to the physical structure where a microwave transmitter / receiver is installed to have LOS.

Microwave Transmission:
Refers to the practice of transmitting information over radio waves from one transmitter / receiver to another.

Near Line of Sight:
Is a situation where LOS is not available and the technology used is able to complete the connection by directing the signal in the direction and the two ends are able to communicate.

Point-To-Point (P2P):
Refers to a communication link with exactly two end points.

Radio Waves:
Refers to the type of electromagnetic connection created by a radio signal to broadcasted through the air from a transmitter to a receiver.

Rain Fade:
Refers to the loss of data due to rain or atmospheric conditions where signal degradation occurs. The system will generally retransmit at layer 2 and for the most part, the end user is not impacted.

Unlicensed Microwave:
Refers to the practice of installing Microwave Technology without registration with the FCC. There are frequencies available for this, but there are no guarantees that another user will not cause interference and use the same frequency.

Cellular Communications Terms

Mobile Device:

Is a device that performs communications functions and utilizes a cellular service provider. It comes in the form of a cell phone or smart phone.

Smart Phone:

A term that refers to a cellular device that contains cell phone operations and other functions that operate similar to a PC when running applications.

Cell Area:

The physical area around a cell tower where a signal can be sent or received between a mobile device and the cell antennas located on a cell tower.

Cell Towers:

A physical structure that extends into the air with stationary antennas that maintain the signals with the mobile devices while in the cell area.

Code Division Multiple Access (CDMA):

Is a cellular transmission type that is an upgrade to GSM and assigns a unique code to users to better share frequencies and support multiple conversations at a time on a cell network.

Fourth Generation (4G):

The upgrade to 3G that will support MMS and data rates of 100Mbps for mobile users on a mobile device. The standard has not been defined and carriers are using the term as a generic upgrade to their 3G networks.

Frequency Division Multiple Access (FDMA):

Transmissions that are divided by frequencies into narrow bands and allowing multiple conversations to take place at a time.

Global System for Mobile (GSM):

A popular transmission option and integrates TDMA and FDMA to improve the access to the cellular networks.

Long Term Evolution (LTE):

The current standard for what cellular companies are calling 4G. It will support MMS and faster speeds, but will not support the original objective of 4G.

Mobile Telephone Switching Office (MTSO):

Orchestrates the process of moving a cellular connection from one cell to another.

Multimedia Message Service (MMS):

This will support multimedia messaging between mobile devices.

Second Generation (2G):

This was the transmission standard that accommodated SMS and forced the development of mobile devices to incorporate keyboards.

Short Message Service (SMS):

A standard set to send and receive short alphanumeric messages between mobile devices.

Third Generation (3G):

Changed the industry by packetizing data transmitted by mobile devices and thus introduced a new concept of Internet access to the cell industry.

Time-Division Multiple Access (TDMA):   Uses time cycles to handle multiple conversation at a time, similar to TDM discussed in the Data Communications section.

Satellite Communications Terms

C band: Are most commonly used in Satellite communications because of the strength and frequency ranges.

Downlink: The signal that travels from the satellite to earth and will have a lower frequency range than the uplink.

Earth Station: The ground based antenna that is used to send and receive signals from a Satellite.

KU Band: Is a narrow band that is used in VSAT systems. It uses 14 GHz on the uplink and 11 GHz on the Down Link. Also used in Direct TV for broadcasting.

Low Earth Orbiting Satellites (LEO):   Are Satellites that travel closer to the earth's surface so the round trip delay is shortened. However, they are not stationary in their orbit so multiple satellites are required to maintain a connection.

Main Earth Station (MES):   The main point of a VSAT solution where the primary functions of the transmission are shaped and networked with the remote terminals.

Footprint: The area of the earth's surface that a satellite covers.

Geosynchronous Orbit: Is the orbit of a satellite over the earth's equator.

Geostationary Orbit: Refers to the attribute of a geosynchronous orbit where the satellite remains over the same point of the earth's surface as the earth rotates.

Satellite: Is a microwave receiver / repeater that is physically located 22,300 Miles above the earth's surface (unless a LEO).

Uplink: The signal that travels from earth to the satellite. The frequency is higher than the down link.

Very Small Aperture Terminal (VSAT):   A specific type of satellite service that uses a KU band and leverages smaller remote receivers to access satellite networks.

Traditional Data Communications Terms

Asynchronous Transfer Mode (ATM):   Is a fixed cell based technology that transports data across a carrier infrastructure. With the fixed cell based switching technique, it works well with TDM type applications and supports voice and video very well.

Cell Relay Network: Refers to the type of packet used in ATM that is fixed in size to provide a more predictable throughput that supports applications that typically require synchronous solutions.

Channel Service Unit (CSU):   Was once a separate stand alone CPE that conditions the data for transmission and will do loopback tests for the carrier to test circuit performance. This function is built into the CPE used in today's networks.

Class Of Service (COS):   Is a term used in MPLS. It assigns packets of data to a priority level to ensure selected applications have priority over others. Many in the industry also refer to COS as QOS, that is not the proper use of the term, but know that some do use it that way. COS and QOS are not the same.

Committed Information Rate (CIR):   Is used in Frame Relay and establishes the level of bandwidth committed to the PVC for the client network. All data send over CIR are considered DE.

Data Link Control Identifier (DLCI):   Used in Frame Relay and refers to the circuit identifier for specific PVS. The locations are assigned an actual number define the termination point of the PVC. The DLCI Schemes are up to the client as they are transparent to the service provider.

Discard Eligible: This Frame Relay term refers to the data sent that exceeds the CIR level. If congestion occurs the data outside the CIR will be dropped before any data within the parameters of the CIR and the PVC.

Edge: This is a term commonly used when referring to the ingress or egress point in a network such as MPLS. In simple terms, it is the outside or endpoints of the network. An "Edge Router" is the router located at the Edge or client location.

Edge Router: Refers to the router that is physically located on the client site and is at the "edge" of the network. Most commonly referred to an MPLS router that sits on the client site.

Frame: Refers to the packet of data that rides a network. Frames are generally variable in length and used in Frame Relay.

Frame Relay (FR):   A standard WAN technology based on packet switching and defined virtual links between locations. This service has lived its product life cycle and is not generally sold by carriers today.

Intermittent Service Issue:	Is a client issue that occurs randomly. Given the nature of an intermittent issue it is very challenging to address because it is often clean while testing.
Label Edge Router (LER):	A term used in MPLS that refers to the Edge Router that performs the function of labeling packets according to a set of rules.
Label Switched Path (LSP):	Is an MPLS term that refers to the path a packet of data travels based on the labels or class assigned by the LSR and will determine the QoS.
Label Switched Router (LSR):	A term used with MPLS that refers to the carrier router located within the carrier network and not on the client site. It is responsible for routing traffic according to the labels assigned to the packets of data as it works its way through the network.
Multiprotocol Label Switching (MPLS):	An intelligent IP based telecommunications network that controls the QoS by using a labeling technique to route traffic.
Permanent Virtual Circuit (PVC):	Is a connection that is established and virtually permanent within the networks configuration. Used in Frame Relay, this provided a predefined path for data transmission.
Port:	In packet based networks, Frame Relay, ATM, MPLS or the Internet, this refers to the entry or exit point of the shared network.
Priority Routing:	Routing, for example in an MPLS network, based on a labeling scheme that will allow traffic to flow based on a predefined assignment of priority to the application or port.
Private line:	A dedicated network connection that has physical path provisioned through a carrier network with only one ingress and one egress.
Quality of Service (QoS):	A term not limited to MPLS, but used frequently, that refers to the control mechanisms use to achieve a user experience or service quality.
X.25:	One of the first publically used packet networks offered by telecommunications companies. The service offered a set of basic access options to transport data. Carriers do not sell this as a service to clients any more.
Interworking Function (IWF):	Acts as the gateway to help facilitate connections between different networks and equipment.

Data Routing Concepts Terms

Backward Compatibility:
Refers to the ability for technology solutions to work with previous generations. An emerging technology would then work interchangeably with an older version to maintain service continuity.

Border Gateway Protocol (BGP):
Is a routing protocol that maintains a table of IP networks to support multiple connections and provide core routing decisions based on network availability. Commonly used in Edge Routers to provide redundancy and business continuity solutions.

Bridge:
A device that passes data with no intelligence. The bridge will pass data between like networks with no assumptions about where the address is.

Class A IP Address:
A block of IP Address assigned by the service carriers that connect and provide IP Services. This class contains 16,777,216 IP Addresses in the block.

Class B IP Address:
A block of IP Address assigned by the service carriers that connect and provide IP Services. This class contains 65,536 IP Addresses in the block.

Class C IP Address:
A block of IP Address assigned by the service carriers that connect and provide IP Services. This class contains 256 IP Addresses in the block.

Dynamic Host Configuration Protocol (DHCP):
Protocol that auto configures IP networks and assigns temporary addresses to devices on a network.

Dynamic IP Address:
Refers to IP Addresses that change every session. The IP Address is assigned by either the computer interface, host or a server dedicated to assigning dynamic address (DHCP). This is the opposite of a Static IP Address.

Interior Gateway Routing Protocol (IGRP):
Created by Cisco, it is a routing protocol that reduces the number of hops in a transmission over a network.

Internet Protocol version 4 (IPv4):
Refers to the fourth revision of the Internet Protocol that uses a 32-bit code for addressing. This version replaced IPv3.

Internet Protocol version 6 (IPv6):
Refers to the successor of IPv4 and uses a 128-bit code. Significantly increases the number of available IP addresses.

IP Address:
Is a numerical label assigned to a devices connected to a network and identifies that device through an advertising process to allow other devices to connect.

Medium Access Control (MAC):
A unique address or identifier referencing a physical network segment or device.

Network Address Translation (NAT):
An IPv4 standard that allows a LAN to use one set of IP Addresses for internal traffic and a second for external traffic.

This practice reduces the number of required IP Addresses for a single company.

Open Shortest Path First (OSPF):   Routing algorithm used to calculate routs based on transmission performance.

Routing: Is the process of selecting paths in a network to send network traffic and transmit data.

Router: Is a device that transmits data packets based on intelligence across a network. This is a device that will pass data between unlike networks.

Static IP Address: Is a fixed or "assigned" IP address to a network or network device. Depending on the application, this may or may not be necessary. The opposite of this is a Dynamic IP Address.

Transmission Control Protocol (TCP):   One of the core protocols of IP and services Layer 4, the transport layer. It provides the sequencing function and ensures the date is in the correct order and discards duplicated data.

TCP/IP: Is a suite of several protocols listed below. It is the most commonly accepted transport protocol used today.

Suite of TCP/IP Protocols:

Telnet	Kerberos	TCP
FTP	DNS	IP
SMTP	SNMP	ICMP

Managed Services Terms

Data Center:
A facility with specific requirements focused on effectively housing equipment (MSPAlliance).

Franchised MSP:
A business model used to facilitate smaller companies with the resources needed to be a fully functioning MSP. In this model, the company buys into the Franchise and in return has full access to the resources (i.e. NOC & Documented Procedures) and the assistance in the sales and marketing efforts.

Management Information Base (MIB):
Is the network performance data a network management agent collects. This information is stored on the device and the SNMP application will access the data to extract near real time information on the performance of the network device being managed.

Managed VoIP Services:
Is a Hosted IP PBX solution where the service provider manages and maintains an IP PBX and extends the use of the service to the market place. Generally will use some commonly accepted standard (i.e. SIP) to allow for easy set up and install of the users.

Master MSP:
Is an MSP that invested and built the facilities to provide Managed Services. They then extend the service to smaller MSPs to sell the service and create a sub channel of distribution for the MSP services.

Monitoring:
Is the act of recording the performance or effectiveness of a network device as a means to know if action should be taken.

MSP:
Any IT service provider that proactively manages a client's IT asset for a fixed monthly fee (MSPAlliance).

Network Management:
Is the practice of building procedures around a suite of software and hardware tools to maintain networks near or at optimal performance.

Network Operation Center (NOC):
A secure & enclosed space that is dedicated to the automated & manual function of monitoring and managing client networks (MSPAlliance).

Ping:
Refers to the act of sending a small packet of data to a specific network address where the other device will send a response. Many use this as a way to test if the other device is available and will generally time the response to measure the time it takes. This is commonly used to measure latency in the network.

Proactive Performance Monitoring:
With the use of network management tools, it is the act of building trend analyses and predicting potential issues within a managed network to make the appropriate adjustments to networks before issues arise.

<u>Off-Sight Data Replication Services</u>:	*As a service*: Often a service provided by a MSP that will install equipment or software on a client site and manage a set of procedures that will ultimately back up all the required data in a secure data center located 30 plus miles away from the original client locations.
	In sourced: Rather than contracting the service with an outside firm or MSP, if the client has more than one location, they will often set systems up that will back up data to the other locations to prevent lost data if the physical building or computer network were to fail or incur some natural disaster.
<u>Remote Access</u>:	In terms of Network Management, it is the ability of a NOC or other control point to access a remote computer or network for the purpose of monitoring and management.
<u>Remote Remediation</u>:	Is the act of fixing a computer or network from a remote locations or NOC. It is common for MSPs to track this statistic. It saves both time and money when MSPs do not dispatch technicians to a client sites. The minimum target is to be above 85% of all issues solved remotely. The ultimate goal is to be above 95%.
<u>Standard Network Management Protocol (SNMP)</u>:	Is the most commonly used standard for network management application to query management agent applications and collect the MIBs. This is part of the suite of protocols in TCP/IP.
<u>Percent Of Availability</u>:	The term references the percent a service is up and working. There are several levels and is not just "Five". First the formula has been provided:

Formula to calculate "Percent Of Availability":

$$\frac{TM-DT}{TM} \quad = \quad \text{Percent Up}$$

"TM" is Total minutes in a Year (525,600). "DT" is Total Down Time. The percent is based on down time in a year.

Percent Of Availability	*Number Of 9s*	*Hours*	*Annual Down Time* *Min*	*Sec*
99%	"Two 9s"	87	36	0
99.9%	"Three 9s"	8	45	36
99.99%	"Four 9s"	0	52	33.6
99.999%	"Five 9s"	0	5	26
99.9999%	"Six 9s"	0	0	31.68

Type Of Internet Service Provider Terms

Asymmetric DSL (ADSL):

Is designed to deliver a higher speed Downstream than Upstream. This provides better throughput for the user and generally meets the common need of down loads. The separation in speeds resolves Cross Talk issues that occur with DSL. 1.5 Mbps speeds can travel about 18,000 feet while 6 Mbps speeds can travel about 12,000 feet. Distances that exceed these distances will work at lower speeds. There is, however, a limit to the range the service will work.

Cable ISP:

Is a service provider that uses traditional cable television networks to access the Internet. Various grades of service are available, but it is important to note that these networks are shared and while great speed is available, the actual throughput depends on the usage of the network beyond the users in a single facility.

Cellular Access:

This is an alternative access to the Internet that can use whatever Generation available in the service area by the cellular provider. Mobile devices can access the internet through the network and the carrier is then connected directly to the Internet and is the ISP. A cellular connection can be provisioned in a router as a stationary connection. 3G will allow up to 2 Mbps of bandwidth, depending on signal strength and the service provider. The available services with 4G will provide higher bandwidths.

Dedicated Internet Access (DIA):

Is Internet access that accesses the ISP facility through a fixed Local Loop. Common facilities include T1, NxT1, DS-3 and more options.

Digital Subscriber Line (DSL):

Is the industry term that refers to a suite of digital services provided by ILECs and CLECs to provide Internet access over POTS lines. The signal travels at higher frequencies than voice. Therefore voice and data (i.e. Internet traffic) can travel on the same physical copper at the same time.

Downstream:

Is the flow of data coming from the ISP Port to the user. Typical example would be to down load a presentation from a web site.

Hop:

Sometimes this is referred to as a "leg". The term refers to the segment of transmission between routers. Depending on the connection, ISP and client configuration, the number will vary significantly.   Generally speaking, the more Hops in a connection the slower the performance.

High-bit-rate Digital Subscriber Line (HDSL):

This refers to the most mature of the services, as it uses a T1 or E1 local loop to connect the user to the DSL port. This is used when the user is too far from the ISP to access the required speeds. The service is generally more expensive than ADSL, but less that DIA.

ISDN Digital Subscriber Line (IDSL):	Is part of the DSL suit of services, but less commonly used. This service uses ISDN Basic Rate Interface (BRI) to access the service. It accommodates lower speeds of 128 Kbps and is symmetric.
Internet Service Provider (ISP):	This is the carrier or service provider that provides Internet access to the market. There are countless ISPs in the industry and all have different products and services to offer users.
ISP Port:	Is the physical point of entry to the ISPs network. Generally this is a router that has either a physical or logical connection with the end user. The connection is some type of Access provided by an ILEC or CLEC.
MERIT Access Exchange (MAE):	Is the original NAP founded by IBM and MCI (Original – Pre-WorldCom) and originally located in Virginia. Other MAEs were built in other regions to spread the physical locations. This was the original infrastructure of the Internet where all the ISPs could exchange data. These are also known as "Metropolitan Access Exchanges".
National Science Foundation Network (NSFNet):	While not the original version of the Internet, it was a critical phase in the development of growing the network of supercomputing centers from 1985 to 1995 when it was replaced by the MAEs.
Network Access Point (NAP):	The physical point that ISPs peer. NAPs operate at Layer 2 and in essence became the internet when it replaced the NSFNet on April 30, 1995.
Peering Agreements:	Is an arrangement between ISPs to directly interconnect networks to allow traffic to flow over each other's networks.
Private Peering Points:	Is a router or switch that is provisioned strictly for the use between 2 or more defined ISPs that have a Peering Agreement in place to exchange Internet traffic.
Public Peering Points:	Are the physical NAPs or MAEs that facilitate the open peering between ISPs.
Symmetric DSL (SDSL):	Meets the needs of those that have requirements to upstream and downstream data are higher rates. The max speed is 2.3 Mbps and is limited to about 10,000 feet from the ISP Port. SDSL can also refer to "Single-Line DSL", but for the most part, the term is used to refer to symmetric connections.
Tier 1 ISP:	This is an ISP with direct Peering Agreements to exchange traffic with other ISPs. In theory, users who use Tier 1 ISPs will have improved performance since it is "direct" access to the Internet. This is a debatable point and the CTP Program is not intending to take a position on the differences or effectiveness of various ISPs business model.
Tier 2 ISP:	This is an ISP that has direct access to ISPs with direct Peering Agreements. In theory, users who use Tier 2 ISPs will have an extra set of Hops to access the Internet. This is a debatable point and the CTP Program is not intending to take

a position on the differences or effectiveness of various ISPs business model.

Tier 3 ISP: This is an ISP that has access to Tier 2 ISPs. In theory, users who use Tier 3 ISPs will have 2 layers of extra Hops to access the Internet. This is a debatable point and the CTP Program is not intending to take a position on the differences or effectiveness of various ISPs business model.

Upstream: This refers to the flow of data coming from the user to the ISP Port. Typical example would be if the user FTPs a file to a server.

(VDSL):   Next Generation of DSL service. Up to this point, DSL have all been sub 3 Mbps type access. This emerging technology will be asymmetrical and support downstream speeds of 52 Mbps and upstream of 12 Mbps. Distances and supporting infrastructure is all pending. This is all forward looking, so information will be updated as available.

Network Security Terms

Demilitarized Zone (DMZ):   Is a network segment often referred to as a "screened subnet". This is a host computer or network of computers that are separated from general access to the Internet or even internal users. Generally requires user name and passwords and occasionally other authentication to access. This is not a function of a firewall, rather a product of how the network is set up.

Domain Naming System (DNS):   Is typically located on a server within the LAN and acts as the translator for names of computers and their associated addresses. Simply put, it is a database that tracks names and addresses for the users in the LAN.

Extranet: Is a secure portal for employees, customers and / or suppliers to access specific information. The authorized users must have the ability to access and is generally protected by a user name and password. Different level of security is placed on this level of access depending on how critical the information.

Firewall: Is CPE that prevents unauthorized access to a Network.

Intranet: This is a secure Portal reserved for access to employees of a company. It is generally limited to intra-company information.

Intrusion Detection Service (IDS):   An application that will match data flow with typical characteristics and will execute action based on a set of rules.

Intrusion Prevention System (IPS):   This is in the form of CPE or software and adds another layer of security to the infrastructure. The system matches packet flow to known signatures to authenticate the activity..

Malware: Software installed without the consent of the user or administrator.

Portal: A term that refers to a defined location in the WWW that provides information or value to the user entering. Depending on the need or application, it may or may not be secure.

Security Policy: Is the corporate approach to documenting the process and accessibility of information available on the network. It will reference how the distribution of company sensitive materials to employees and nonemployees is managed.

Spyware: Software that collects information about the users without their knowledge.

Trojan: A program that seems to have a simple fun function, but, unbeknownst to the user, causes great damage to the computer.

Virus: Software that spreads by opening an infected file.

Vulnerabilities: This term refers to known and unknown "holes" in a
                       company Security Policy. Companies constantly check for
                       known and unknown holes. It is common to hire outside
                       firms to penetrate the security to identify and access the level
                       of security.

Worm: A malicious application that replicates itself throughout a
                       network and eventually cripples the performance.

Agent Best Practices Terms

Code Of Ethics (COE):
The TCA created details of the core guidelines of agent professionalism. If a Certified Telecommunications Professional is found to have violated any of these points, action will be taken that could include removal of the certification.

Expedites:
Is a request to prioritize and speed the set provisioning process to complete within a shorten timeframe. This is generally done by eliminating steps. This practice could lead to more issues down the road. It is advisable to avoid Expedites whenever possible.

Firm Order Commitment (FOC):
This is the date the LEC or ILEC commits to deliver the Local Loop. It is not the date that the client can expect to have service. Generally, once the local loop has been installed, the carrier will then complete their provisioning process.

Inventory:
Is the list of circuits and services the client has ordered. A complete Inventory would include circuit IDs and other specific information for each item.

Issue Management:
This is the process of working through conflicts or trouble tickets with the carrier service. It is critical that the agent be a facilitator and helps the process without sacrificing the integrity of the client or service provider.

Life Cycle Management:
This is the ongoing support the agent provides while the term of service is available and in place. This includes insuring the business requirement has been satisfied and re-contracting service at the end of the term.

Master Service Agreement (MSA):
This is part of the carrier agreement that defines the terms and condition of the carrier service. It is one of the structural components of the carrier service contract.

Provisioning Process:
This refers to the process a service provider manages to complete an order. It includes order acceptance, loading specific client information into the systems, set up billing and deliver the service to the client as contracted.

Provisioning System:
This is the software system the service provider uses to manage the Provisioning Process.

Representation:
This refers to the act of an agent effectively communicating a carrier solution to a client. To do this, the agent must understand the carrier strengths, process and pricing structure.

Service Delivery Intervals:
Refer to the time that it take to deliver the service. This start when the order is placed and ends when the client accepts the service. It is important to note the process does not start

	with a signed contract, it starts when the carrier accepts the order and it is placed in the carrier provision system.
Service Order Attachment (SOA):	This term refers to the part of the contract that will outline the details of the service related to the MSA. Many times this will identify the locations, the actual service and term dates.
Signature Block:	This is the legal reference to the client and service provider acceptance of the order. There is a place for an authorized person from the client to sign as well as the carrier. The contract is not completed until both parties have accepted the terms. Generally speaking, the client signs first and the carrier sign just before the provisioning process begin.
Standard Intervals:	This refers to the standard lead times the service provider manages to complete the provisioning process. It is important that the agent get conformation from the service provider ahead of time to manage client expectations from the beginning.
Test and Turn-Up:	This is a typical phrase that refers to the final stage of the provisioning process. It is the act of turning the service up and confirming with the client that it is working. Some refer to this as just the "turn-up", either way it is the same thing.
Trouble Tickets:	This is the documented event of a client reporting trouble on a circuit or problem with the service. The carrier will issue a Trouble Ticket (TT) Number and it is important that the person reporting the trouble save the number for reference.

Manage A Sales Process

Business Development:

Is the process of managing a number of techniques that include Lifecycle Management, Managing a Sales Process, Account Management and responsibility to grow revenues for the company they are employed by.

Decision:

This is the term used in the "Manage A Sales Process" that refers to the Decision Maker actually moving forward with an executable plan to use the services proposed or not.

Decision Maker (DM):

This term refers to the person that is ultimately responsible for making the final decision regarding a project.

Decision Making Process:

This refers to the process the client goes through to make decisions. It is critical that the professional sales person understand the process. Each client has a different process, so it is important to know and understand.

Disqualification Process:

This is the process of identifying why the client would NOT move forward with the project. In the interest of time, not all projects are worth pursuing. Disqualifying project early is important.

Influencer:

The person who may have Pain and critical input to the final decision, but is not the person ultimately responsible for the final decision.

Interest:

Is the term used to refer to a Client who is intellectually curious and fishing for ideas or solutions that may improve the current situation. This is not a reason for people to buy.

Lifecycle Management:

The approach to Account Management that includes specific direction to the details of a service or suite of services sold to a client.

Need:

This term in the "Manage A Sales Process" refers to the desire to change or meet some defined expectations. This is not Pain. It could be the avoidance of Pain.

Pain:

This term in the "Manage A Sales Process" refers to the general reason why people buy. Ultimately, it is a corporate situation that the end result personally hurts the Decision Maker.

Pick For Pain:

This is the process a professional sales person goes through to understand the level of pain and who it will impact the DM. The objective is to understand how the decision will impact the DM and the pain that will be felt if no decision or another decision is made.

Problem:

This term in the "Manage A Sales Process" refers to the issue that may or may not be the source of the Pain. It is, however, an undesirable situation that is causing discomfort.

Qualification Process: This refers to the process of determining if a new opportunity meets the required criteria to move forward with the project.

Sales Process: This is the strategic approach of working a new sales opportunity through the close and into Lifecycle Management.

"Two P Theory":   There is a balance between "Persistence" and "Pestering". A professional who is managing the sales process needs to be aware of how they are being received. Persistence is a good thing, but when overdone, the person become a pest and many times the project will derail and go in another direction.

Other Industry Terms

Acceptable Usage Policy (AUP):

This term has multiple applications in the industry. One is created by a user company (or organization) and will define what is acceptable use of the Internet and what is not. The second is more critical to the continuation of service as most ISPs will define what is acceptable use and if violated, they have the right (better put – responsibility) to discontinue service to the user. This information is generally available in the ISP Master Agreement.

Adware:

This refers to software that downloads advertisements during user session on the Internet. It is typical for the session to be displayed in the form of a Pop-Up. Generally the files are not harmful, but are considered a nuisance to the users.

Blacklist:

Is a term that refers to identifying a e-mail or IP Address as an unwanted source for e-mail or other communication. A user can do this on their PC (or whatever device) with e-mail services and tag unwanted sources sending e-mail to not let the e-mail through. Countries that censor the Internet will tag URLs or IP Addresses that are not allowed to be viewed. It is the opposite of a Whitelist

Bookmark:

This is a term associated with the use of the WWW and is a locally stored (meaning on the user computer) URL that can be saved in a "Favorites" folder as a shortcut to return back to that particular page in another session.

Cloud:

Is a representation of a set of resources that perform a defined function without describing all the details of how the service is provided.

Cloud Computing:

Is subset of Cloud Service. This is a complete IT delivery service where the end users have access through a public or private network. The client has no management responsibilities other than to determine who has access.

Cloud Services:

Is a service model used to pool shared resources that are easily configurable and allow access to a subset of their resources to a single client otherwise cost prohibitive. Another way to look at it, Cloud Services are a way to deliver software applications to a business through a virtual means.

Content Delivery Network (CDN):

Also known as Content Distribution Network is the practice of storing copies of documents, media files or other data in a system where when requested, the information will improve the speed in which it downloads by having it stored in a facility that is more accommodating of these requests.

Dual-Tone Multi-Frequency Signaling (DTMF):   This is the standard sounds generated when dialing a number and each button on the phone has a standard sound detectible electronically. This allows a switch, IVR or any other computerized device to interact with the user through the use of a touch-tone key pad. (i.e. dialing a number or accessing an extension).

E-commerce: This is the practice of buying or selling products or services over any electronic medium. In most cases today, this is done through the Internet.

Hot Spots: This refers to locations (i.e. restaurant, book store or coffee shop) where a Wi-Fi access point is available and provides access to the internet. Depending on the location and source of the access, this may or may not cost anything.

Hyperlink: This is a reference point in a document that will connect the user to another source within the WWW. Generally this is text that is in blue or an image that is programmed as a link.

Hypertext Transfer Protocol (HTTP):   Is the protocol used to collaborate or distribute data on the WWW. It is the foundation of the communication on the Web. "HTTP" is commonly seen in the navigation bar on the Web Browser.

Interactive Voice Response (IVR):   Is a technology that allows people to interaction with a computer by the use of either voice commands or DTMF. The system will respond with computer generated responses (generally prerecorded) for the person to respond and perform a repeatable function.

Internet 2:   In the spirit of the original Internet, this is a consortium of over 200 educational institutions, 70 businesses and 40 government agencies. The objectives are:

1. Develop and manage a "cutting edge" network
2. Test Capabilities of new-generation applications
3. Transfer advancements to the Public Internet

Internet Addiction Disorder (IAD):   A condition that has evolved in recent years where compulsive disorders have consumed people's daily lives using the Internet. It is not recognized as a Mental Disorders as of yet, but tendencies indicate that it could.

Internet Café: This is the term used to describe a public place that provides Internet access. Some with Wi-Fi for free and they sell food and drinks. Others for a fee either through a Wi-Fi access point or wired and billed for the time on-line.

Internet Censorship: This refers to the practice of suppressing free access to the Internet. While less common in the US, other countries (i.e. China & North Korea) limit the flow of access by Blacklisting specific sites or IP Addresses.

Internet Television: This term is not the same as IPTV. This term refers to the programming availability on-line and streams the shows

	selected by the user in an on-demand basis. The world of emerging technologies will flourish in this area program become more interactive with the viewers.
Internet Protocol Television (IPTV):	This term refers to packetizing the data to be streamed and accommodates the developing requirement to allow for interactive responses from the users.
Pink Contract:	Is a unique contract that allows spamming by the client. This generally falls into a higher priced service, but the ISP provides special language to allow the client to spam.
Pop-Ups:	This is a form of Adware as a way of advertising. It is not limited to that; many sites use this type of technology to provide additional information and to enhance the user experience. It is not all negative so it is important to have the ability in the Web Browser to allow them.
Streaming:	This refers to the constant flow of data from a single source on the Internet. Typical use is downloading music for a period of time. There are other references to the term "Streaming", but this is the type most relevant to the contexts of the CTP.
The Wild:	This refers to the Internet and WWW as a user is able to access the vast resources available. This would be used as a reference point where a user would have access to "The Wild".
Uniform Resource Identifier (URL):	Is known as the Web Site Address to the common user. It is the name associated with the routing of the web site request by the user.
Utilization Reporting:	This is data that reports on the utilization of network or computer resources in terms of availability percentages. This data is collected and used to predict the impact of future project on the networks or if an upgrade is required.
Web Analytics:	This is the a tool used by companies that track website traffic and tendencies by the user on a web site. This is used in marketing research to identify behavior on the web site. Companies will use this tool to match the user behavior with suggestions for products and services.
Web Browser:	This is the software application that is loaded on the user's computer that will perform the function of interacting with the WWW and the Internet. It performs several functions, but the most common is the presenting of information that is available on the WWW.
Whitelist:	This term refers to an approval list of entities. This can be created locally, on a user PC to allow e-mail from a specific address or source. Censoring countries can create acceptable site lists for people to view freely. It is the opposite of a Blacklist.

World Wide Web (WWW):   The coalition of an infinite number of unregulated resources and information made available to those with access to the Internet and a browser.