

## Demystifying Telephone Terminology

We have come to take the office telephone system for granted. We lift the handset and we hear dial tone. As much as we love to hate the phone company, dial tone is probably the most reliable service we can get. For customers of many businesses, the telephone remains the main form of communication.

### Know your ‘trunks’

A telephone connection from your telephone system to the central office (CO) is called a *trunk*. This is similar to the land line that you probably have in your home and is often referred to as a POTS line (for “plain old telephone service”). The service is delivered over a single pair of copper wire.

There are two types of analog lines or trunks: *loop start* and *ground start*. These refer to the signaling used by the communications device to seize or allocate the phone line for use. Loop-start lines are seized when the circuit is closed, i.e., the receiver is picked up. This action causes a loop between the two wires originating from the phone company. The phone company senses this current draw and presents a dial tone. Ground start works by momentarily grounding the tip conductor to seize the line.

Another widely used type of trunk is a DS1. This is a type of telephone circuit with a bandwidth or capacity of 1.54 Mbps. The circuit can be configured using two different protocols, T1 or PRI. The T1 protocol divides the DS1 into 24 channels of 56 Kbps each; the PRI protocol divides the DS1 into 23 channels used for calls (b channels) and one channel used for signals (d channel).

The T1 protocol requires that each channel be dedicated for inbound or outbound service while the PRI protocol allows each channel to support inbound and outbound calling. In addition, the PRI protocol supports ANI (automatic number identification, or Caller ID) and DNIS (dialed number identification service). DNIS is a protocol that provides the number dialed to the phone system. DNIS is the protocol used for direct inward dial (DID) calls. This allows a pool of numbers to be allocated to a specific trunk group for routing based on the number called. This provides the appearance of a direct line to a specific phone in the system.

### Beyond voice

*Internet protocol* (IP) trunking has become a popular means of providing a connection to the phone system. This is true for a very good reason: It allows voice to coexist on the same network as data using the same protocols. Some providers offer IP trunking as an alternative to a DS1. The bandwidth used for IP trunking must be dedicated to voice use to ensure quality voice connections. DS1 circuits have two billing components: the “local loop” and the DS1 service. The local loop charge is the DS1 circuit that carries the calls to your local phone company central office. This is referred to as *transport*. The charge for the usage and maintenance of the circuit is known as *traffic*.

Trunks that have the same function can be combined into trunk groups. On inbound calls, they hunt from one trunk to the next based on “busy” or “ring no answer.” This allows several simultaneous incoming calls to the pilot number of the hunt group; it’s useful when implementing a call center or switchboard.

### **Assessing your needs**

When selecting a phone system, you will need to determine how your telephones will connect to the *private branch exchange* (PBX). An end point is the termination of the connection between a device such as a telephone, fax machine, or modem. If fax machines and computer modems will be used, your system will need to support analog endpoints.

Whereas analog phones convert voice into electrical energy, digital phones convert the conversation to digital format. Most digital phones are proprietary to the particular phone system. The exception is *voice over IP* (VoIP), which uses the same standard suite of protocols on which computer networks operate. This allows voice and data to share the same network.

A phone system from any manufacturer will give you dial tone when you lift the receiver. Your phone system and installer will likely be with you for years to come, so be sure to check references and ongoing maintenance costs.

Purchasing a new phone system can be a daunting project. But if you understand the terminology, you can make an informed choice. We here at Webco are prepared to answer your questions and assist you with deciding on which telephone system to purchase.