

# Central Virginia Datacomm

## IP Telephony Brief

### Definitions

- TCP/IP – Transmission Control Protocol/Internet Protocol
  - The communications protocol used for Internet traffic and most other networks.
  - Referred to as “IP” for short, which in turn is used in VoIP (see below).
- TAPI – Telephony Application Programming Interface
  - An industry standard for interfacing Windows and dialing devices, ie. Modems and phone systems.
  - Allows for functions such as automatically dialing contacts from Outlook, Act!, or other TAPI-compliant applications.
  - Also provides advanced functions for advanced call control features integrating computers and phone systems (CTI – Computer Telephony Integration).
- POTS – Plain Old Telephone Service, ie. analog phone service like you get at home.
- Legacy PBX – By this I mean the classic office phone design where all phones on the desk are wired straight back into the PBX, which controls everything. While there are some industry standards, basically these are proprietary, closed systems.
- Hybrid – A phone system that incorporates elements of IP and legacy technology, either supported a mix of handsets or having the ability of at least the PBX chassis speaking TCP/IP to other systems.

### Voice over IP (VoIP) vs. IP Telephony

- VoIP refers generally to any voice traffic that is passed over a computer network, whether within an office, between offices over a company’s own private data lines, or over the Internet.
- IP Telephony is a subset of the broad VoIP marketplace, and refers specifically to actual phones utilizing network connections versus legacy dedicated connections back to a PBX.
  - This is typically an internal system, basically an office phone system, though may span multiple locations using private data lines or the Internet.
  - An important point is that while voice traffic *within* the organization is IP, the phone system communicates with the phone company via conventional POTS lines, T1, PRI, etc., just as a legacy system would.

Confusion Point: People don’t understand the above differences, so get confused on some common applications of this technology.

- Home Internet phones use is VoIP but not IP telephony. The company, whether Vonage, Comcast, or whomever, supplies an adapter box, typically called an analog terminal adapter, into which you plug in a standard analog home style phone. It packetizes the analog voice signal using digital signal processors (DSPs) and puts it on the network connection (ie. cable modem).

- For home use, often the analog adapter is integrated into a multifunction device combining a router or firewall, to have a tidier all-in-one solution.

#### Other Options

- Skype
  - Uses the Internet for free calls to other Skype users. They offer the ability to call non-Skype users for a minimal monthly charge. There are literally tens of millions of users world-wide.
  - Available as standalone hardware devices or free software for PC installation.
  - Is the voice equivalent of the popular peer-to-peer file sharing software, and is not considered secure, so is not welcome on most corporate networks.
- WiFi
  - Basically, your common wireless networking.
  - Your hitching a ride on someone's Internet connectivity to use Skype or other Internet phone services.
- IP Centrex – The old Centrex technology, except updated to utilize networking.
- Hosted (outsourced) IP PBX
  - Your office phones connect to an IP PBX elsewhere. (IP Centrex is one type of this)
  - Typically you pay an installation charge and a monthly charge per user.
  - You need a high speed Internet connection – additional \$\$\$.
  - When all is said and done, not an inexpensive solution, but potentially attractive in some situations.

#### IP Telephony in the Marketplace

- In short, it is taking over. Over fifty percent of new installs of business phone systems are IP, not legacy. In a few of years the sales of legacy systems is expected to be almost non-existent.
- All the best new developments for features and productivity are in the IP realm.

Provided by Central Virginia Datacomm, your networking connectivity and IP telephony specialist. This was not intended to be a comprehensive document. We would be glad to discuss your needs in the telecommunications area.