

IP Telephony Convergence

# IP Telephony Drivers for the SMB Market

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Empowered by Innovation



The IP telephony drivers for the small to medium business (SMB) market are simple to understand. Business owners in this market segment are looking for products and services that stand the test of time. In addition, several members of this classification have businesses with a limited Capital Expenditure (CAPEX) budget. So the products and services they buy have to work correctly from the start with limited disruption of service.

While every company wants to lower operational costs, improve worker productivity, enhance IT efficiency, and enhance their competitive positioning, IP telephony provides additional primary benefits to an SMB owner:

- Empowers business owners to replace antiquated equipment with state-of-the-art equipment
- Enables business owners to invest in a future-proofing technology
- Allows business owners to capitalize on inherent user mobility aspects of IP for employees
- Can provide better tools for the business owner to be self-sufficient

**IP Telephony empowers business owners with the ability to change out older technologies,** like TDM (Time Division Multiplexing) technology, with the new IP technology. Business owners are now seeing example after example of real IP telephony deployments. In fact, they are inundated with information from IP-based PBX (switch) manufacturers, as well as commercials from residential manufacturers such as Vonage™ and Skype™. The recurring theme is that TDM is dead. While this is somewhat exaggerated, the truth is that IP telephony is now becoming mainstream technology.



**IP Telephony can now provide an investment in future-proofing technology for a business owner.** There is no debate about whether IP will be the future technology for telephony; this has already happened. The only debate is exactly how long it will take IP to replace TDM. This timeframe is shrinking by the minute as the benefits of voice and data convergence (such as a distributed office environment and new applications) become more widely understood and implemented.

In a cost-conscious world, a switch replacement can be a very costly venture, especially if a business owner is performing a complete change-out. Some manufacturers, such as NEC, have made this migration easier for business owners. With NEC technology, the customer can “Migrate when you want, how you want, because you want” and phase in IP telephony expenditures.

One of the future-proofing benefits of IP telephony is support for the SIP protocol. A business owner should be wary of investing in an IP telephony system that cannot support SIP clients. SIP, Session Initiated Protocol, mandates interoperability between manufacturers. This means that a business owner could theoretically use a phone manufactured from Vendor A on a switch manufactured from Vendor B. In addition, SIP-based applications would work between multiple vendor terminals and switches. This type of interoperability has rarely worked in a conventional TDM PBX, and when it did work, it was typically only valid for a small subset of features. While complete SIP interoperability is not exactly true today (not all vendors implement the same SIP features in the same way), the industry is quickly moving in this direction, and SIP implementations should be ubiquitous and robust enough in the next couple of years to make this dream a reality. That being said, vendors should already support SIP clients. NEC, for example, has supported SIP clients since 2004.

**User mobility for employees is another primary driver for IP Telephony.**

There can be significant monetary and productivity savings for small businesses with large office spaces or for companies with multiple office environments.

This user mobility can be exhibited in many forms such as:

- Terminal (hard phone) mobility
- Softphones
- Wireless LAN data connections
- Wireless LAN voice connections
- IP-based ACD agents
- Unified messaging
- Find-Me/Follow-Me features
- Remote worker telecommuting
- Location tracking of users and assets

Terminal mobility means the user can physically move their phone from location A to location B on the company network and instantly have dial tone. This can be an important driver for a company that is rapidly growing or has any employee relocation. Typical TDM deployments require a movement of physically cross-connected twisted pair wires before the user can move their specific phone. This creates a time lag as well as extra costs for the telephone technician to make the wiring changes. With IP telephony from NEC, this is a snap; even with 911 concerns.

Softphones (software-based phones that run on a PC or laptop) offer the user another form of mobility. The user moves anywhere across the corporate network with their PC, and the phone travels with them. A softphone can be used on other company properties (i.e., anywhere across the company WAN), hotel rooms, Wi-Fi hotspots, international locations, etc. For example, the NEC softphone is a fully functional telephone with additional IP-enabled attributes such as white boarding, screen sharing, video conferencing, chat, short text messaging, and presence. Besides the value of being able to make and receive calls, other values include toll bypass (especially if traveling to other countries), and a cost-effective solution for locations that typically would not have a phone (such as a classrooms and empty offices).



Wireless LAN (WLAN) is another example of an application that provides the user with mobility (i.e., freedom) on a corporate network. A WLAN allows users to “roam” the network untethered (conference rooms, meeting rooms, lobby, courtyard, smoking room, etc.). Employees now have the ability to multitask and retrieve time sensitive answers to questions during conference calls. The user can use data applications with laptops, tablets, and PDAs, as well as voice services with wireless LAN phones and BlackBerry® devices. Wireless LAN also allows cost-effective Internet access for new and existing locations like dorm rooms, hospital rooms, hotel rooms, etc.

IP-based ACD (Automatic Call Distributor) products allow agents to be geographically separated from the ACD switch. This means that agents can work out of their homes, remote locations, or anywhere they have IP connectivity to the switch. Different products are available that can scale from a basic feature set all the way to a complete suite of functions. Some products, like the ones from NEC, can also support softphone-based ACD agents. IP mobility also provides additional capabilities in the area of business continuity by allowing agents to be spread across multiple time zones and have a fast, automatic (no user intervention) failover to multiple switches in the event of disaster or link failures.

Unified messaging is an application that has many advantages for users. One is the ability to convert speech to text and vice versa. Another feature allows voice mails to be appended as attachments to e-mails and then sent to a user’s e-mail mailbox. This allows users to access voice mails either through the voice mail system or through e-mail. Receiving voice mails through e-mail can be particularly advantageous if an employee is traveling or not currently at their main

office. The employee can receive voice mails anywhere across the WAN or by VPN connection. They can even listen to e-mails from the phone. With screen pops (computer telephony integration), the user has instant notification of incoming calls, e-mails, and voice mails while away from their desk or while using applications such as Word® or Excel®.

Find-Me/Follow-Me applications are another important feature that has been enhanced through IP. While some of these capabilities were available on TDM systems, IP telephony typically gives end users an easy way to create forwarding and prioritizing rules based on either employee presence or Caller ID. This allows important callers to be able to *always* reach the employee and never miss *that* important call. NEC has several applications that provide Find-Me/Follow-Me capabilities.

Remote teleworking is another definite advantage of IP telephony. This capability allows users to work from locations other than their home offices on a temporary or permanent basis. The user can literally have access to all capabilities from their remote location just as they would in their office location (depending upon network configuration rules). This has huge benefits such as reduced commuting travel time and costs, the ability to have a larger employee base, reduced employee office space costs, business continuity of operations during inclement weather or natural disasters, improved employee satisfaction, etc.

Various software applications can further enhance remote teleworking capabilities by providing video conference capability, desktop sharing (WebEx™-type application), white boarding, collaboration, text messaging, and presence. Along with traditional office productivity, remote teleworking enables distance doctoring, educational seminars, and emergency triage support.

Location tracking is a new feature that is rapidly delivering ROI. E911 applications are one vivid example of the importance of location tracking for users, especially after Vonage's publicized lack of E911 support for its retail consumers. Vendors need to have a workable, standards-based solution. NEC is releasing just such a solution in the fall of 2006. In addition to passing E911 information to a public service point, the NEC solution can also deliver the information to a campus security location. This has the potential of deploying emergency support in a shorter time frame.

Another aspect of location tracking is the capability to locate equipment and other assets. For example, wheel chairs could be tagged so that they could always be located (whether they are in their typical location or whether they were left in a completely different location). Other examples include luggage racks for hotels and motels, computers and expensive equipment, Wi-Fi handsets, and moving/storage carts. This means basically anything that travels around the office can be tagged and tracked.

SMBs typically have a small IT staff. **With IP telephony, software applications are available to help them be more efficient as well as self-sufficient.** For example, IP-based management tools allow users to remotely connect into the system and make changes to the switch programming. Typical TDM systems required users to drive into the office to make changes to the PBX programming. Most of this can now be accomplished remotely, which is great for system administrators who get notified of problems in the middle of the night.

Any adds, moves, changes, etc. are also made more efficient for the IT staff. Current management applications provide the ability to create multiple types of templates (for employee type, phone type with functions specified for particular buttons, etc.), as well as the ability to use range programming to quickly create or modify user accounts.

In addition, data protocols such as LDAP (Lightweight Directory Access Protocol) can be used to make integration with other network technologies, such as Microsoft® Active Directory® Services, easier for the IT staff. The IT staff can now leverage one set of user data (first name, last name, extension, e-mail address, etc.) across multiple applications instead of having to hand type the same information into different databases. This not only saves time and labor costs but reduces database errors.

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