

EXTENDING PBX FUNCTIONALITY TO REMOTE OFFICES AND TELEWORKERS WITHOUT SACRIFICING SURVIVABILITY

The Situation

In response to changing market demands and available resources, companies now maintain larger numbers of comparatively regional offices. In many cases, these offices are no more than a telecommuting employee's spare bedroom. These small satellite offices are convenient for employees, inexpensive to maintain, and help companies stay closer to their valued customers. Unfortunately, they also tend to limit the sophistication of the telecom capabilities available to employees in such offices. Without a PBX at their worksite, employees are left without access to corporate voice mail, private dial plans, the IVR-based corporate directory, call transfer, auto attendant and other services that help keep staff at larger offices productive and well-connected.

Historically, companies have faced three choices in addressing this issue: **1)** allow remote offices and teleworkers to fend for themselves without corporate PBX services; **2)** shoulder the tremendous expense of providing a PBX or PBX-like device at the remote office; or **3)** allow remote staff to connect to the PBX over the public switched telephone network. This last alternative can be particularly costly, since it means that every call to and from the remote office must pass over the PSTN – typically during peak business hours when rates are most expensive.

VoIP technology affords such companies a tremendous opportunity to extend the power of their PBXs to remote offices and teleworkers without having to foot the bill for incessant use of the PSTN day in and day out. Instead of using the PSTN, companies can simply allow remote phones to connect to the PBX via local IP connections, which are typically available for an extremely low, flat monthly rate. Usually, this low-cost IP connectivity is already in place, since remote workers need access to both corporate IT services and the Internet.

The Technical Challenge

PBX extension allows the small to medium sized entities to transparently connect their remote office and teleworkers to the corporate PBX through the corporate IP infrastructure, which is often under-utilized. PBX extension maximizes bandwidth efficiency by melding voice (VoIP) and data traffic onto one network.

This connectivity eliminates the need to deploy individual PBXs in remote offices while leveraging the central site's PBX functionality and intelligence. At the same time, it effectively increases the number of users who are connected to the PBX, and allows them to utilize their existing phones, whether they are analog, IP-based or softphones. Remote office workers now have the convenience, flexibility and functionality of the PBX in their remote location phones. This solution is a cost effective means to access the corporate PBX, and is accomplished with little additional investment and minimal infrastructure maintenance. There is also the added benefit of significantly reducing the dependence on the PSTN.

While VoIP offers significant benefits to businesses by enabling them to leverage their existing PBX investments by extending those investments across multiple locations, several factors have typically inhibited their implementation of the technology. These factors include:

Concerns about reliability and quality of voice service over IP/Internet connections

Conventional PSTN-based voice communications offer excellent, consistent quality and reliability. Corporate managers and remote users aren't interested in cost savings if, in the process, they wind up jeopardizing the phone service that they depend on every minute of the working day.

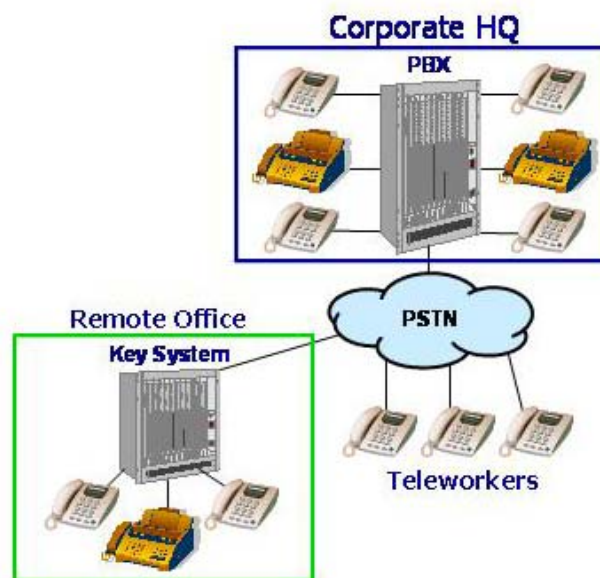
Concerns about technical implementation and management skills

Most IT departments – especially at smaller companies – do not possess extensive VoIP technology expertise. With their staff resources already strained to the limit, these companies may be hesitant about taking on a new technology that is outside of their current core competency.

Concerns about infrastructure disruption

Companies have made significant investments in their PBXs. They do not want to have to overhaul that infrastructure or spend a lot of capital to gain the benefits of VoIP-based PBX extension.

To be practical, a VoIP PBX extension solution must therefore protect voice quality, offer simplicity of installation and management, and be non-disruptive to existing voice and data infrastructure.

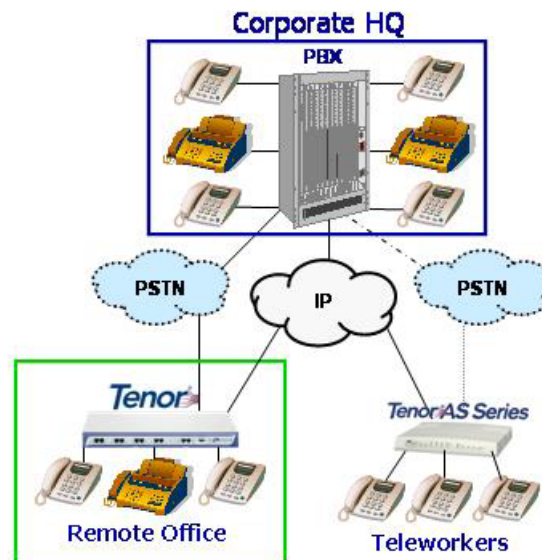


Most companies that extend their PBXs to remote offices and/or teleworkers do so via the PSTN. This results in significant daily local and/or long distance usage charges.

Quintum's Tenor: Non-Intrusive Solution That Assures Survivability of Calls

PBX extension allows remote offices and teleworkers to leverage the capabilities of the corporate PBX, such as voice mail, private dial plans, access to the corporate directory, call transfer and auto attendant, regardless of their location. But, the greatest fear of routing phone calls through the IP is survivability of those calls and the availability of the entire phone network in the event that the IP fails.

Quintum Technologies' patented Tenor switching solution uniquely enables companies to extend their PBX capabilities to remote offices and teleworkers via VoIP without compromising voice quality, disrupting existing infrastructure, or making the administration of communications infrastructure unacceptably complex. Calls to and from the outside world can easily be routed through the corporate PBX – eliminating PSTN charges while allowing remote employees to use PBX functions just as if they were working in the main office.



With Quintum's Tenor solution, remote offices and teleworkers can be easily and inexpensively connected to corporate PBXs for full-function phone services

Availability of PBX functions to remote locations

With a VoIP-based connection to the corporate PBX, remote workers can gain the full benefits of PBX functionality – including voice mail, access to corporate calling plan discounts, transparent call transfers, etc. And all this functionality comes without incurring local PSTN per-minute charges.

Guaranteed Call Quality

Tenor switches vigilantly protect voice-call quality by continually monitoring conditions on IP connections and taking immediate action if those conditions threaten voice traffic in any way. If conditions such as delay or "jitter" become evident, Quintum's SelectNet™ technology automatically and transparently switches any active calls from the IP connection to the PSTN. This can be done in mid-call without interrupting either party. Once conditions on the IP connection return to acceptable levels, VoIP can then be re-activated. The savings associated with VoIP can thus be momentarily sacrificed to ensure that users always experience acceptable call quality.

Non-stop availability

In addition to protecting call quality, Tenor switches also ensure that phone service is never interrupted. In the event that a switch power supply fails, for example, the Tenor's "pass-through" capability allows calls to continue being completed via the PSTN. Even if the headquarters PBX goes down, remote offices can still communicate with each other via their independently operating Tenor units.

Simple, non-disruptive implementation

The Tenor's unique MultiPath architecture allows it to be easily installed in line with existing PBX trunks to the PSTN. This requires little or no reconfiguration of the PBX and eliminates any need to add costly PBX tie trunks. The Tenor's integrated call routing functions are easily configured to identify which calls – i.e., those coming in from the outside world to remote employees – are to be routed over IP connections.

Conclusion

Remote offices and teleworkers need PBX functionality as much as employees in main corporate offices. In the past, due to PSTN and PBX re-configuration costs, providing this extended functionality has been an expensive proposition. Fortunately, Quintum's Tenor VoIP MultiPath Switch provides a risk-free, cost-effective and highly adaptable solution for extending PBX functionality to remote employees. With assured call quality and the flexibility necessary to accommodate any number and/or combination of users and locations, the Tenor is clearly the best option for PBX extension.