

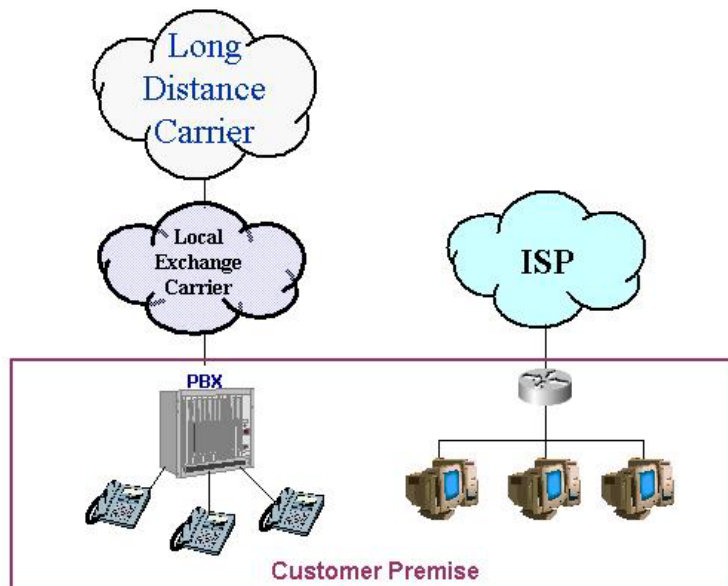
## VoIP LOCAL ACCESS: CUTTING COSTS AND ACCELERATING TIME-TO-MARKET

### The Opportunity

Historically, incumbent local exchange carriers (ILECs) have always stood between competitive telecom service providers and their customers. The ILECs' ownership of the local loop has meant that other providers have had to 1) incur local carrier charges as part of all their service offerings and 2) depend on ILECs for a wide range of provisioning and operational needs.

With the advent of VoIP technology, however, service providers can now bypass the PSTN local loop by having customers use their Internet data connections for last-mile transport of voice calls. This eliminates the utilization costs incurred when phone calls first travel over ILEC call-switching infrastructure and provides immediate accessibility to customers.

By taking advantage of VoIP, service providers can quickly bring new voice services to market at extremely competitive price-points. They can completely eliminate the equipment co-location, service activation, and call accounting hassles that typically arise when dealing with ILECs.



*In conventional service provider scenarios, voice traffic passes through the ILEC's local loop – resulting in added costs, provisioning delays and administrative hassles*

## The Technical Challenge

While IP-based local loop bypass offers significant business advantages to next-generation voice service providers, two primary concerns have historically inhibited them from implementing it:

### Concerns about the reliability and quality of voice service over IP networks

Customers won't tolerate sub-par voice services. For a service provider, any degradation in the quality or reliability of voice service can therefore be disastrous. The potential loss of business that can result from such problems is simply an unacceptable business risk. So, to be practical, an IP-based local loop bypass solution must be impervious to congestion, latency, "jitter," or any of the other conditions that can impact voice quality over packet-based network infrastructure.

### Concerns about CPE overhauls

Customers aren't inclined to undertake major overhauls of their voice architecture just to do business with a new service provider – no matter how compelling that service provider's value proposition may be. So any IP-based local access solution must "plug into" the various existing types of PBX/voice and router/data architectures that customers commonly use, with an absolute minimum of installation work required.

In other words, to be practical and profitable, an IP-based local loop bypass solution must fully ensure high-quality, highly reliable voice service, and be designed to provide simple, risk-free implementation within customers' existing communications environments.

## Quintum's Tenor VoIP Solution

### Quintum Technologies' Tenor Solution: Reliable, Easy-to-Deploy VoIP Local Access

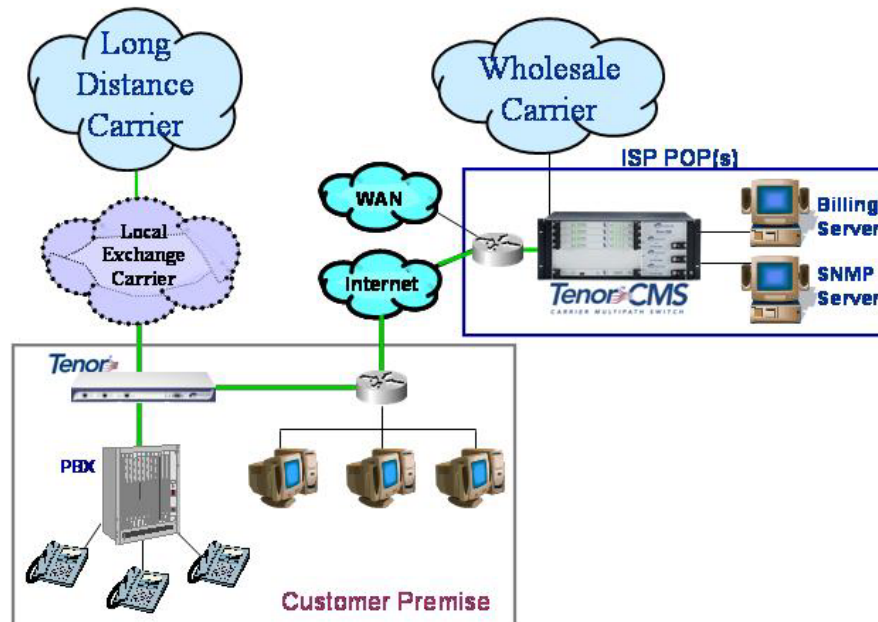
Quintum Technologies' patented Tenor switching solution is ideal for service providers seeking to take advantage of IP-based local loop bypass opportunities. The Tenor solution uniquely overcomes the technical challenges associated with IP bypass, including:

#### 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 congestion or other problems become evident, Quintum's SelectNet™ technology automatically and transparently switches any active calls from the IP network to the PSTN. This can be done in mid-call without interrupting either party. Once conditions on the IP network are restored, local loop bypass can then be re-activated. The savings associated with bypass are thus momentarily sacrificed to ensure the non-stop quality of the provider's voice service.

## Non-disruptive implementation

The Tenor's unique MultiPath architecture allows it to be easily installed in line with the existing voice switching and IP routing infrastructure both on customer premises and at service provider POPs. The administration of call routing rules can be performed and managed with little effort. Additional Tenor capacity can also be added incrementally as required, providing the scalability necessary to support growing call volume.



*With Quintum's Tenor switches, local access can easily and reliably be set up using customers' existing Internet connections – eliminating the cost and hassle of depending on an ILEC.*

## Conclusion

VoIP local access is essential for cutting costs and accelerating service provisioning. However, IP-based bypass is only practical if it is highly reliable and can be implemented without excessive effort, cost, infrastructure disruption or risk. Quintum Technologies' Tenor VoIP MultiPath Switch fulfills these critical requirements with connection-sensitive PSTN failover SelectNet™ capabilities and the industry's most hassle-free installation. The Tenor is thus the ideal solution for service providers seeking to effectively leverage today's ubiquitous IP connectivity to better service their customers.