

White Paper

Leveraging the Next Generation Network to Seize the IP Centrex Opportunity

How Carriers can deploy IP Centrex
and reap the benefits of
Enterprise migration to IP PBX

Energizing Communications



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Introduction

As carriers increasingly seek new sources of revenue, one emerging profitable application is IP Centrex, also termed “hosted PBX”. This service allows features such as telephone extensions, voicemail, conferencing, forwarding to other extensions, and auto-attendant, among many others. As IP Telephony is increasingly reliable, carriers are introducing IP Centrex to even their largest customers.

Market Size

The market for IP Centrex will grow quickly, affording carriers a tremendous source of revenue. With IP Centrex, they can provide a compelling offering that seamlessly integrates the PSTN and Next Generation Networks using the Veraz solution at its core – and a choice of IP Centrex systems from Veraz partners. According to analyst firm ABI, the market for IP Centrex is growing rapidly:

	2001	2008
IP Centrex	\$16	\$9,000
Other Carrier VoIP	\$30	\$27,000
Total Carrier VoIP	\$46	\$36,000

Numbers in millions (Source: ABI)

The rapidity of new service rollout and creation of differentiated offerings, along with the cost reductions available through Voice over IP, will help carriers become more profitable. Estimates of the IP Centrex market by analyst group IDC show growth to \$6.8 Billion by 2007. As numerous vendors are selling their IP PBXs into enterprises, potentially bypassing service providers, they urge carriers to take advantage of this opportunity quickly.

Advantages of IP Centrex over IP PBX

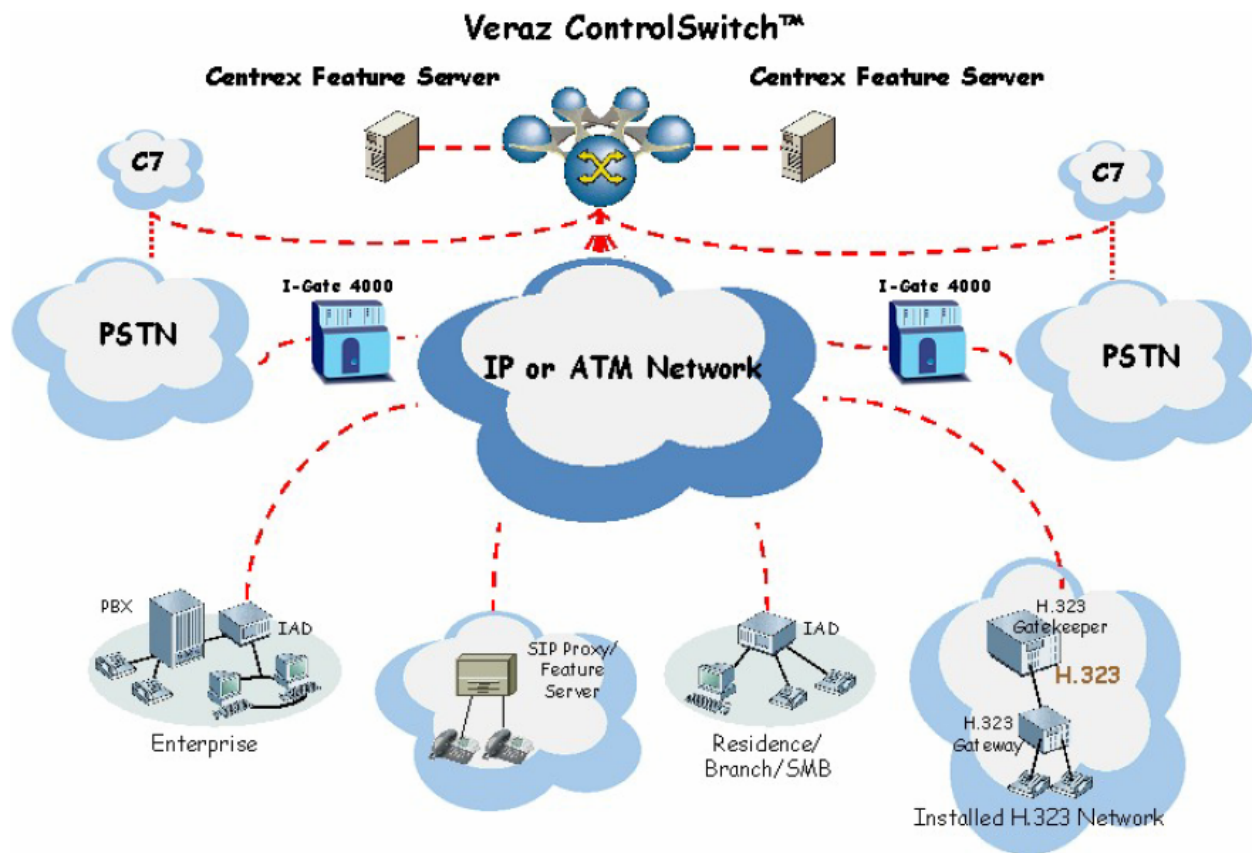
Some advantages of IP Centrex include the reliability of a carrier network, especially with the Veraz distributed and fault-tolerant architecture that seamlessly integrates with the PSTN and can scale to millions of concurrent calls with a high level of redundancy. Enterprises do not need extensive testing of IP PBXs, and do not need a staff to support the PBX. The following table highlights the contrast:

Feature	Veraz ConrolSwitch™ & IP Centrex	IP PBX
Total Cost of Ownership	Low: managed by carrier (outsourced)	High: Equipment, man-hours, moves adds changes and deletes (MACD); total cost must be factored in (downtime, etc.)
Interoperability	<ul style="list-style-type: none"> · SS7 (multiple variants), PRI, MGCP, SIP, H.323 (all versions), C7 (multiple countries) 	<ul style="list-style-type: none"> · Interoperability limited to small set of protocols · Closed or proprietary protocols
Scalability	High; can span continents	Low – rarely exceeding few thousand
Reliability	<ul style="list-style-type: none"> · Complete redundancy with element separation · Geographic diversity for location failure · Exceeding five 9's for total system 	<ul style="list-style-type: none"> · Several points of failure · Typically three, maybe four 9's or so for total system
Extensibility	Additional features added and tested by carrier with feature/application servers	Adding features require manpower and development time & risk
Management	Centralized and backed up	Depends on PBX vendor
Call Routing	Customizable by operator; over 60 parameters for optimization in multisite deployments	Limited and depends on carrier selected
Risk of technology	Carrier bears risk with sufficient manpower	Enterprise bears risk
Billing	Call detail records element with protected redundancy	Departmental chargebacks difficult

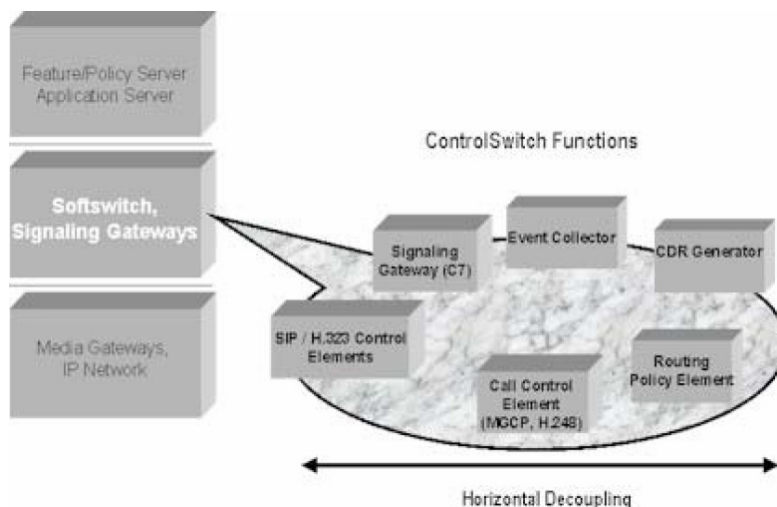
Requirements for Carrier-Class Centrex

Numerous vendors offer IP PBXs for enterprises, but they do not scale sufficiently for a carrier to deploy IP Centrex service to numerous businesses. The carriers require an IP softswitch (software-based switch) that connects to both IP Centrex servers and IP PBXs via standard interfaces such as SIP and H.323. Moreover, they must connect to existing traditional PBXs and the rest of the PSTN and should be deployable over a global geography if needed, scaling modularly with no limit and be highly fault-tolerant. These capabilities enable a uniform infrastructure where IP Centrex users can transparently coexist with the Service Providers' other customers.

Hence, it is now possible to offer features and functions of IP Centrex and other applications across TDM, legacy VoIP, and next-generation VoIP networks.



Service providers should choose a distributed softswitch – one with a modular architecture whose different elements are tightly coupled. For example, the SIP or MGCP element is separate from the CDR (billing) element, which is separate from the call routing element. Each of these is replicable as many times as desired, to scale to millions of calls with fault tolerance and backup.



This modular architecture enables true carrier-class deployment of IP Centrex, with the Centrex functions on a device connecting to a softswitch that scales to support as many calls as desired, with as much fault tolerance as required, and across as many cities or countries as needed.

The carrier may leverage Controlswitch™ routing policies to centralize call routing decisions, thereby allowing all IP Centrex Systems to use the same call routing policies. These policies are flexible and easily programmable in the architecture, with over 60 parameters available for call routing. These include least-cost routes, time of day, and other parameters. With very simple programming, code blocks may be combined and reused as needed. For example, a call originating from one Centrex group or PBX may receive different treatment from calls originating elsewhere.

All call detail records may be centralized and backed up from a common element, even as the IP Centrex servers are distributed geographically. Finally, with complete interoperability with MGCP, SIP, C7 variants, and H.323 (including both Vocaltec and Cisco H.323), carriers can preserve their installed base of equipment and migrate to Voice over IP. With a softswitch, the network will scale and allow the deployment of IP Centrex and other applications on feature servers and application servers.

With a distributed softswitch featuring a modular architecture, carriers can offer IP Centrex with rapid global rollout, high reliability and scalability. Regardless of size, carriers reap the benefits and help their enterprise customers to reap the benefits of this emerging market before enterprise players decide to buy their own PBXs, IP or otherwise.

Advantages for Carriers

The most compelling advantage is top-line growth and reversing the recent financial issues facing carriers. With a robust, non-stop, fully reliable service offering, carriers can offer a service to enterprises that would be too difficult or expensive to deploy on their own. Moreover, the ability to add new services, whether unified messaging, find-me/follow-me, etc. would allow carriers to upsell additional services to enterprises using the same infrastructure they already have in place, contributing significantly to gross margin.

Another advantage is in attracting new customers and reducing churn. With an architecture as reliable if not more than the PSTN, the provider can offer better bundles of features than the competition can. Customer attraction becomes viable, as well as offering differentiated feature bundle to different segment, or communities of interest, within the existing and expanded customer base.

The cost reduction benefits are apparent, with the open-architecture, open-standards approach. Using non-proprietary elements keeps costs down, and allows implementation of best-of-breed Centrex feature servers alongside the most scalable and reliable softswitch – namely, the Veraz ControlSwitch™.

Advantages for Enterprises

Advantages for enterprises include cost savings on IP PBXs and software.

Furthermore, the manpower requirements go down when a carrier is responsible for operation. Finally, a carrier has more resources to test a new service offering than does an enterprise. Between the cost savings, new features, reliability and scalability, enterprises are best served utilizing IP Centrex services from their carrier.

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