



**Virtual PBX: The Inevitable Shift for Business
or
*Here Comes IP Centrex***

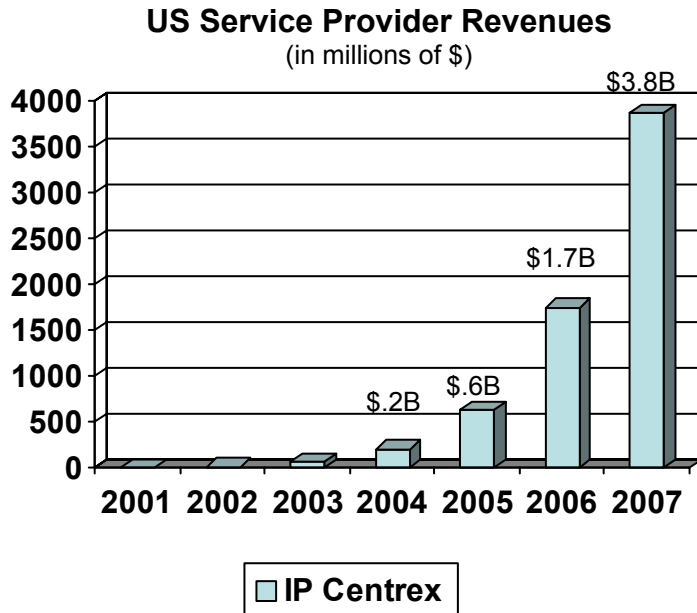
By Laurie Shook

“The wide scale adoption of VoIP is inevitable. It is a matter of when, not if.”

— Anil Reddy, president and CEO of Kancharla Corporation, a VocalData Customer

The Internet has brought unprecedented opportunity to small and medium sized businesses because they can compete effectively against larger competitors through a cost-effective on-line presence. However, when it comes to voice communications, smaller businesses are still at a disadvantage because they typically can't afford the PBXs with more sophisticated capabilities. This disadvantage also applies to large enterprises with multiple, distributed locations such as retail, real estate, and financial services firms that would require multiple PBXs to obtain sophisticated voice capabilities across the corporation.

This voice communications disparity is beginning to change with the advent of virtual PBX, or IP Centrex, capabilities for which demand is expected to explode over the next few years.



Source: Probe Research Report, "VoIP Connectivity for the Enterprise"

While virtual PBX has obvious benefits for small and distributed businesses it is also good news for service providers. As discussed in a recent Probe Research report entitled "VoIP Connectivity for the Enterprise", IP Centrex models will be essential for keeping service providers from being forced into the role of pipe providers, closed off from high-margin enhanced services revenue opportunities. Probe projects that U.S. revenues for IP Centrex services will grow from \$3.8 million in 2001 to \$3.8 billion in 2007.¹

With virtual PBX, service providers supply the sophisticated capabilities usually found in premise-based PBXs—such as extension dialing, automatic call back, conference calling, call forward, and transfer—from their network, using an applications server

designed to interface via an IP-based protocol. This allows businesses to combine both their voice and data communications on one connection, which often results in a 30% or more in connectivity charge reductions alone. More importantly, businesses have the choice of “renting” capabilities from the service provider, instead of having to buy them through an expensive capital outlay up front, as would be the case with a PBX.

“Unfortunately, because of the capital costs required to install traditional PBX equipment, advanced telecommunications features are simply too cost prohibitive for many small and medium-sized businesses,” said Carole Bradley, Director of Voice Engineering Design and Development for Intermedia. “A typical PBX system can cost between \$10k and \$25K to install, and the annual management and maintenance costs can add another 5% annually.”²

Because of the cost drawbacks of customer premise PBXs, service providers have long tried to attract businesses with a hosted service—known as “Centrex”. Although Centrex has its benefits, it has never really lived up to its potential because of some of its inherent feature weaknesses. Typically, Centrex end-users don't have extensions that can be direct-dialed, so businesses have to hire receptionists to field all calls—contributing to the Centrex company's perception as a small-time business. Also, businesses have to purchase two lines per user in order to let users field multiple calls, since basic Centrex requires a connection for every line from the telephone company central office to the business. There is also a widely spread perception that Centrex offerings haven't kept pace with the feature enhancements occurring in the PBX world.

Another drawback that has kept Centrex from gaining ground in large enterprises is that moves, adds, and changes—or “MACS” have to be administered for a fee by the local telephone company. According to John Egli, product marketing director for Nortel Networks, the average cost for a MAC on traditional Centrex can reach \$150 per station.³ In addition to the \$150 transaction fees, businesses wait up to two weeks for their moves to be completed, and then have to carefully coordinate all internal moves with the phone company. Since the average office worker moves his desk once a year, many companies consider this an excessive administrative burden.

Why are there expectations that virtual PBX will be able to overcome the disadvantages associated with basic Centrex?

For one thing, costs for MACS have declined or disappeared. Egli states that IP Centrex MAC costs are under \$50. Indeed, there are examples of service providers, such as PingTone, who are providing these types of services free to their enterprise customers. Why are they willing to do this? Virtual PBX platforms all use Graphical User Interfaces that make administrative functions much easier, resulting in significant timesavings. In addition, there is a trend to move administrative functions to the business customer, which is made possible by web-based applications. With a web app, the business can go on-line and schedule its move, and have the data fed to the service provider’s systems automatically. Businesses gain a greater degree of control, and the added MAC cost is eliminated for both the service provider and the business.

Virtual PBX also brings the ability for all lines to be dialed directly, without requiring the intervention of a receptionist. Also, businesses aren’t confronted with the need to order extra lines to handle multiple calls at once. Since IP telephony is packet-based and uses a compression scheme, multiple calls can be handled to one number over the same facility at the same time. In a cost analysis published in December 2000 in the Yankee Group report “IP Centrex Services: Is This the Holy Grail for End Users and Service Providers”, these types of savings contribute to an estimated 23% savings for IP Centrex vs. basic Centrex for the 25-person office.⁴

Virtual PBX also offers some compelling arguments as to why it will (and already does) have a more robust feature set than basic Centrex. Basic Centrex was developed by Class 5 Central Office switch manufacturers. Since much of the US market has been dominated by two vendors, there has been limited incentive to develop new features. Service providers have been to some degree captive to the platform they selected, and since the platforms are proprietary, it has been difficult for external parties to develop applications that could interface to them. Any new development performed by the switch vendors typically requires an 18-month development cycle. In contrast, virtual PBX application servers utilize industry protocols such as SIP and MGCP to communicate with gateways and phones in a softswitch-based architecture. As a result of the focus on standards, virtual PBX platforms support a variety of phones from different manufacturers. Since the platforms are applications based, third-party software developers can program according to an API in order to develop new capabilities. For example, VocalData has developed the VOISS API, which enables a third-party developer to program applications that impact call control. Examples of third-party applications might include enhanced web portals, or call center monitoring and reporting applications.

In addition, virtual PBX feature sets are more robust because virtual PBX platforms can create new features by integrating voice and data over an IP network. For example, a standard feature of virtual PBX platforms today is the web portal, a web-based application that consolidates end-user call information and capabilities. The user has immediate access to a corporate directory, can click on the listing to dial the called party, and can easily view voicemails, and call logs, instead of having to manage communications through the old audio-only interface of the telephone.

So what is the current state of vendor platforms to support virtual PBX? Since various platforms have been in development for several years, they have achieved effective parity with traditional PBX and Centrex feature sets. Indeed, a look at just some of the features supported by VocalData's VOISS platform speaks to the issue:

- Call Waiting
- Call Waiting ID
- Call Forwarding
- Speed Calling
- Three-way Calling
- Caller ID
- Call Blocking
- Anonymous Call Rejection
- Call Return
- Call Trace
- DID
- Transfer
- Do Not Disturb
- Hold
- Mute
- Redial
- N-Way Conferencing
- Voice Mail Notification
- Park
- Pick-Up
- Call Back Queuing
- Authorization Codes
- Billing Codes
- Multiple Lines
- Multiple Call Appearances
- 4 digit dialing
- Caller Name Display
- Caller Number Display
- Dynamic Number Assignment
- Group Pickup
- Intercom
- Call Back Queuing

Initial IP Centrex platforms supported the customer bases of smaller CLECs, who were the first proponents of IP Centrex, quite effectively. Platforms such as VocalData's provide an extremely attractive starting point, with systems available for \$250,000, compared to Class 5 switching cost implementation ranging from \$1 million to \$5 million. Industry experts such as Joe Gagan, Senior Analyst with Yankee Group, believe that North American incumbent local exchange carriers will start to offer IP Centrex commercially within the next 12 months (by mid 2003).⁵ The challenge is now to provide the size, reliability, and performance needed to support these larger implementations. VocalData is well positioned to support this, having reached throughputs of 200 calls per second. Likewise, the VOISS platform is designed to easily scale to support in excess of 500,000 users.

Now that virtual PBX, or IP Centrex, has attained functional parity with older technologies, the next driver for it is the search for new value-added applications that the market will widely adopt. Those applications considered to have the most potential center around unified communications and mobility. Unified communications implies that end-users will be able to manage all of their communications from a single application—including voice, voicemail, email, instant messaging, and presence. Mobility of course implies that these tools will be available across locations. The idea is that users should be free to communicate with any mechanism, and to switch between different media as their needs dictate. For example, VocalData recently announced its integration of MSN Messenger with its virtual PBX platform. This lets instant messaging users "click to call" when their IM conversation requires a change to a voice conversation. Likewise, they are able to integrate presence indicators between instant messaging and the phone, so that communicators via any medium have the best possible information as to a recipient's presence status.

What are some of these upcoming applications? "We envision a scenario where call control is actually integrated with an end-user's calendar," said Michael Camp, CEO and president, VocalData. "A caller could then be automatically told I was in a meeting, or sent to my Blackberry device, depending on how I pre-defined the priority of the caller," said Camp. "Our service providers are extremely excited about these new capabilities because they represent 'services that sell' — it's more than just 'sizzle' because these features give our customers access to new business segments, and the ability to sell higher margin services, or productivity tools."⁶

Service providers share the enthusiasm for virtual PBX. According to Anil Reddy, president and CEO of Kancharla Corporation, one of VocalData's leading customers, "VoIP represents the future of integrated communications. The wide-scale adoption of VoIP is inevitable. It is a matter of when, not if. Everybody already uses VoIP on the backbone side. The challenge is proving that it really does work on the edge – on the customer side. Now there can be no doubt that it works. The technology is there; the quality is there; and the reliability is there. We've proven that it works."⁷

- 1 "VoIP Connectivity for the Enterprise," Probe Research, Volume 3, No. 2, 2002, page 28.
- 2 Carole Bradley, Director of Voice Engineering Design and Development, Intermedia Communications, October 2001
- 3 John Egli, Product Marketing Director for Nortel Networks, as quoted in "Business Communications Review", February 2002
- 4 "IP Centrex Services: Is this the Holy Grail for End Users and Service Providers," Yankee Group, December 2000, page 4.
- 5 Joe Gagan, Senior Analyst, Yankee Group, November 2001.
- 6 Michael Camp, President and CEO, VocalData, Inc., June 2002.
- 7 Anil Reddy, President and CEO, Kancharla Corporation, October 2001.