Market Analysis

IP Centrex: Into the U.S. Mainstream

Abstract: IP Centrex has entered the mainstream U.S. market vernacular, and will grow by more than five times in the next two years as new services emerge.

By Steve Koppman

Strategic Planning Assumption

By the end of 2004, a majority of IP Centrex-like lines will be provided by major carriers rather than the small niche regional players that do so today — partly as the result of acquisitions (0.7 probability).

Strategic Market Statements

A significant business customer direction on native voice over IP (VoIP) over the longer run will be toward hybrid combinations of customer premises equipment (CPE) and network-based services.

The number of IP Centrex-like lines in the United States will grow more than fivefold in the next two years, reaching 500,000 by the end of 2005.
IP Centrex: By Whatever Name, Coming Soon

IP Centrex — though still more concept than reality, relatively undefined and a label carriers avoid — has begun to enter the mainstream vernacular. Customer interest is increasing as services become more available. Major carriers will establish themselves with new services in the coming year. Total IP Centrex-like lines (though an ambiguous metric) in the United States — a majority from small players in regional niches — are rising into the several tens of thousands nationally on a growth curve of more than 100 percent, which will stay at least constant, and probably accelerate, through 2005 (see Table One).

Table 1
IP Centrex-Like Lines in the United States, 2002-2005

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<tr>
<td>Number of Lines</td>
<td>35,000</td>
<td>55,000</td>
<td>90,000</td>
<td>225,000</td>
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Source: Gartner Dataquest (September 2003)

The Definition: What’s in the Centrex Name

Gartner Dataquest’s assumption is that an “IP Centrex,” service needs to include the following:

- The basic local carrier service component
- At least the functionality and defining features of legacy Centrex
- Some additional, enhanced functionality or converged voice-data capability growing from provision through IP and is provided through networks rather than customer premise-based equipment

The term “IP Centrex” is problematic even to the service’s proponents, and most carriers avoid or reject it. The Centrex name is viewed as a limiting rather than promotional label carrying baggage from its reputation as a carrier alternative typically inferior in functionality and customer control to a private branch exchange (PBX), a chronic loser in most sectors of the U.S. enterprise market and a tightly regulated utility service. (Centrex has, however, historically succeeded in certain vertical markets including local government, universities, school districts and healthcare facilities, and is considerably more popular among enterprises in Canada and other parts of the world.)

Preferred labels for network-based native VoIP services today are hosted IP communications and virtual PBX, names that connote carrier management but hope to transcend the living ghosts of Centrex, but whose definitions are harder to pin down than those of the established service. Carriers and others in the industry often confuse the issue by using the terms IP Centrex and “hosted” almost interchangeably in referring to equipment management and network-based services.
Centrex Features: Legacy to IP
Legacy Centrex has long been defined by such features as four-digit dialing, conferencing, call transfer and forwarding, bridge lines, hunt groups and free intercom calling, bundled with the kinds of other custom features that incumbent local exchange carrier (ILECs) also provide a la carte, from call waiting to voice mail.

Through its use of IP, IP-Centrex-like services offer the additional potential — though often not yet the full reality — of such new features and enhancements as the following:

- Unified messaging, including visual voice mail and the ability to return all message types "at a click"
- Enhanced find me/follow me capabilities to allow callers to locate their targets more easily — for example, to list numbers to be tried in priority order and prioritize which callers can reach you and when
- Outlook integration, with "click to call" in one’s directory, as well as returning calls and voice mail from a browser, and combining Outlook directories with company and other directories
- Web-based call management to monitor and control service features and capabilities
- Web-based instant conferencing with set-up "at a click"
- Automatic call distribution (ACD) capabilities, to allow call answering by rotating worker pools
- Selective call acceptance
- Collaborative applications
- Presence management and instant messaging

A number of smaller providers and MCI already offer at least elements of these features, prominently including Outlook integration, Web-based call management, unified messaging, enhanced find me/follow me and selective call acceptance.

The Value Proposition: Why IP Centrex?
The IP Centrex concept is of network-based service providing PBX functionality without the equipment, with phone calls carried as data, routed over the LAN to your IP phone (though legacy phones with gateways are still commonly used instead). It promises to expand on the functionality of legacy Centrex, while allowing customers to combine data on the same lines as voice without expensive CPE investment. It provides capital and operational economies on hardware and support as data and voice travel over one network, at the same time offering traditional Centrex advantages in carrier assumption of risk for changing technology and service disruption.

The services are still in a relatively "go slow" mode among major carriers for a combination of capital availability, market readiness and technical reasons. But in 2004, the major carriers will get more broadly into the act.
Three Faces of Business VoIP
While VoIP is clearly a growing presence in North American retail commercial markets, most of it has come through the following:

- IP telephony — The use of IP PBXs for private networks, both managed by business customers "do it yourself" or by service providers, the latter generally known as Managed IP Telephony; and
- IP Voice over WAN — Routing of WAN (and local) traffic on a VoIP basis between legacy (non-IP) customer equipment, also in both do-it-yourself and carrier-provided varieties; while
- The share of VoIP traffic from carrier-provided native IP network services remains very small.

Small Players, Big Share
And only a minority of that is provided by carriers whose names most customers recognize, that offer services in most of the country, and that enterprise customers would engage for most of their services. Although they also have disdained the term, a large majority of what could be called IP Centrex lines are still provided by several small, regionally focused players adopting Sylantro and Broadsoft platforms to offer "total solutions" to small and midsize business (SMB) customers in specific, limited regional markets — the most prominent including GoBeam and CBeyond, along with reviving competitive local exchange carriers (CLECs) such as ICG and XO (introducing a service in 2004). Many smaller IP Centrex players will be acquired in the next few years — as wholesaler TelVerse was recently by Level Three and TalkingNets by dsl.net.

Target Market: Large vs. Small
Carriers differ in their relative focus on large and small potential IP "Centrex" business customers. Most large U.S. enterprises with big campuses clearly prefer PBXs. On the other hand, large customers have more capital for pilots on new services such as VoIP, experimenting with small portions of their businesses. They already have data infrastructures with linked LANs and WANs, and many are already familiar with IP data networking.

SMB customers are more risk-averse, with less margin for error on seemingly experimental new services, yet typically are more urgent about finding ways to cut costs, and have accounted for the large majority of IP Centrex adoption so far. SMB customers want innovation but lack IT departments to support complex implementations. Smaller customers, most of all, will want new technology to be demonstrably better and less expensive (and preferably both) — and simpler on top of that. The high cost of IP phones, which has been an adoption obstacle especially for smaller customers, has meanwhile come down to the range of new legacy PBX-based telephones.
SMB customers are likely to be particularly drawn to the fixed-cost value proposition facilitated by VoIP as offered by MCI, GoBeam and others in their bundled options, whether or not the customer is actually paying less, because fixed cost alleviates insecurity from the risk of ruinous bills in special circumstances.

**Competitive Positioning**

**IP Centrex vs. PBXs**

IP Centrex competes primarily with PBXs, with which it should be able to demonstrate at least comparable features and functionality in terms of customer requirements. At the same time, it offers potential savings in capital and operational costs, especially for smaller locations. Outsourcing with network services lets business customers pay as they go, in contrast to the large upfront financial commitment of CPE. The cost trade-offs vary in each situation, however, and require careful total cost of ownership (TCO) analysis. IP Centrex buyers also pass on often-burdensome responsibility for seemingly continually changing technology as well as service disruption at the cost of some diminution of control when customers give up managing their own equipment. IP Centrex, like Centrex more generally, is expected to do better in more geographically dispersed industries and companies with many locations where telecom falls into smaller "buckets" with less coverage by telecom management.

**IP Centrex vs. Managed IP Telephony**

A major service provider alternative also offering VoIP functionality, especially for larger customers, is Managed IP Telephony — the management of IP CPE by carriers, at this point a service significantly more established than IP Centrex. However, Managed IP Telephony normally will mean higher capital costs and be prohibitive for smaller locations, although they have clearly been of interest to large customers. Key decision factors are equipment cost, location size, customer control and functionality considerations, and the nature of service provider guarantees, all of which should be examined in specific from a TCO perspective.

**IP Centrex vs. Legacy Centrex**

IP Centrex also competes with legacy Centrex, allowing customers to save additionally on the convergence of voice on data lines and the potential of new features at broadly similar costs. "Backward compatibility" — the ability of new VoIP technology and services to interoperate well with corresponding legacy technology and services — will be a crucial consideration for network services providers as it is for PBX vendors as business customers seek to try out VoIP in specific locations, departments and applications, so companies will typically be operating with both legacy and IP implementations for significant periods. One initial problem for IP Centrex, despite its enhanced capabilities, is that businesses have already built complex applications such as billing based on time-division multiplexing (TDM), often not quickly replicable on IP. (Which demonstrates an advantage of essentially legacy Centrex services upgraded with IP access offered by the Regional Bell Operating Company (RBOC), though these lack most advantages of a true IP service.)
Hybrid Options
The shape of emerging network-based VoIP/IP Centrex for business is far from determined. Customers may be increasingly reluctant to make an either-or choice that may not be necessary between network services and CPE. Most large customers want to continue the control and advantages of PBXs but not have a "box on every prem." They seek standardized enhanced features across a large number of widely dispersed locations and "teleworking" employees.

The emerging concept of a hosted PBX in a carrier "cloud," though initially hard to distinguish from Centrex, will be an important possibility to watch for in coming years. A true hosted PBX could offer the specific attributes of a branded PBX from a particular vendor, allowing a customer to keep existing applications without the need for on-site maintenance and oversight at each location.

Major Carrier Offerings
Among the large business-oriented interexchange carriers (IXCs), each carrier has moved at a different speed toward roll-out, with MCI differentiating itself with the market's most widespread implementation (though the large majority of Advantage locations and lines so far do not use IP phones but rather legacy equipment.) Other large carriers have taken a slower approach; at this point, Sprint and Qwest plan introductions in 2004, and AT&T has not committed itself.

The regional RBOCs have thus far put forward fairly consistent strategies, planning for two main IP Centrex-like services: relatively quick implementation of a basically traditional, if upgraded, Centrex service with IP access, largely to keep their big in-region Centrex customers eager for an IP voice migration path, using incumbent central office (CO) technology; and secondly, softswitch-based hosted services more geographically flexible and richer in VoIP applications, targeted to small as well as large customers, seen as the "service of the future."

All rollout intentions, meanwhile, should be viewed with skepticism, given their propensity to fall backward, especially with business end-user customers still cautious with their capital and often not finding compelling reasons to adopt VoIP.

At this point, larger business customers are primarily interested in asking questions and conducting trials involving only a small portion of their lines rather than discarding old equipment and jumping ship to a new technology the business case for which is still ambiguous.

For more information on carrier services and plans, see the companion Perspective, "IP Centrex: Where North America's "Big Boys" Stand Today," TELC-WW-DP-0607.

Gartner Dataquest Perspective
VoIP is likely to shift the nexus of customer choice in the network-based direction in the longer run as carriers' IP Centrex-like services provide
greater functional equality with PBXs than was the case in the TDM world, and as the value of IP’s combination of voice with data traffic becomes clearer. Emerging network-based services will allow improvements in customer control over legacy Centrex. At the same time, they will maintain cost advantages vis-a-vis PBX solutions. Those adopting an exclusively network-based approach — at least at first — will largely be smaller customers along with some of the larger customer categories that have preferred legacy Centrex. Managed IP Telephony — the PBX option but with carrier management — is meanwhile already well ahead of IP Centrex (from an earlier start) among large business customers.

The question of what the business VoIP implementation of the future will look like is still very much an open one. Variations on the services will be manifold. The dichotomy between Centrex and PBX may well fade in coming years as customers opt for blended solutions including those that may place IP CPE on large customer installations and perhaps similarly branded PBXs within carrier "clouds" to service multiple smaller locations. Future hybrid arrangements could allow business customers to take advantage of PBX control for large sites and hosted services for smaller ones, avoiding the need for equipment and staffing at each location, ensuring common functionality and cost advantages across their organizations.

The best carrier argument for outsourcing with network-based IP Centrex-like services vs. their own acquisition of IP CPE may well be that customers are less likely to realize VoIP’s projected but often elusive benefits when staffs are tied up in “care and feeding” of new technology and less (or not at all) available to build specific organizational applications that would gain the anticipated benefit of VoIP and where their special knowledge is most valuable. The kind of outsourcing involved in network-based VoIP services, in short, is likely to economize toward more efficient use of costly workers and expertise.

**Recommendations**

Carriers will need to offer a compelling value proposition for new network-based VoIP services, including new features demonstrable at the time of sale. End users are not in a buying mood to convert for vaguely defined reasons or "on spec" based on potential features available at a later date. Basic economies made possible by the combination of voice on customers’ same data infrastructure needs to be made clear to large and small buyers. Carriers also should consider the potential benefits of acquiring small providers already expert in IP-based network services.

Business customers should be on the lookout within the next year for new IP Centrex services and need to carefully consider the costs of CPE and equipment-based vs. network-based services from a TCO perspective. They also must closely examine the providers’ specific service guarantees. These services will offer important benefits, later if not sooner. End users should carefully examine offerings from small and large carriers — though recognizing the geographic and other limitations pertaining to the former as well as the potential for changes in ownership.
Key Issue

How will the Internet and IP-based services impact the public network service market?