What Comes After VoIP for Service Providers?

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October 11, 2004

Issue

Innovation in telecommunications and data communications happens in the enterprise first. It is followed by competitive carrier services, and finally incumbent service providers follow the leaders. Enterprises deploying VoIP today are also deploying or planning to deploy VoIP- related converged applications because the employee productivity savings and the improved customer service opportunities are greater than simply saving a few cents on transport costs. While the carriers have committed to VoIP, are the competitive carriers and the incumbents ready to take on applications-based services? Or will they both be relegated to simply offering a cheaper voice transport and thereby lose out on the opportunity for substantial revenues?

Analytical Summary

Service providers have embraced convergence technology, largely for its cost savings advantage in voice transmission and switching. However, convergence technology also offers even bigger and more dramatic advantages through enabling applications convergence, which can increase the enterprise customer's productivity, improve customer service, streamline business processes, and increase both revenue and profit. But building, bundling, and selling applications convergence is new territory for service providers, and they don't seem to be preparing themselves to navigate this new market. Service providers must acquaint themselves with the mechanics and the implications of applications convergence happening today in large enterprises, and they must prepare their services and business models to take advantage of the revenue opportunities it makes possible. Service providers must immediately begin to design applications convergence in their core network architecture, develop positioning and go- to-market strategies, and retool their OSS/BSS infrastructure to offer applications-based services at a profit.

Perspective

To understand the changes required in their core network architectures, service providers must first understand how their enterprise customers view IP Telephony (IPT). IPT can lower the cost of phone calls and phone systems; however, IPT is also viewed by the enterprise as an enabling technology. It enables rapid and cost- effective integration with a wide range of communications and IT applications that improve employee productivity and customer service (see "Beyond Transport: What VoIP Really Means to Enterprises," September 8, 2004).

Second, service providers must understand how the enterprise's communications systems infrastructure and the enterprise's IT systems infrastructure are evolving. Today, enterprises continue to expect a mix of legacy phone system interfaces and VoIP- based interfaces in their phased deployments; the mix will change over time. Gateways located on the customer premise or in the core will provide the glue for keeping the hybrid. Therefore, the traditional erlang tables won't apply to new models; rather, carriers must develop engineering metrics that assure service levels for the hybrid mix. As enterprises add more real time communications applications like Web chat and click to conference, the traffic engineering models also must evolve.

Third, the Enterprise local area network infrastructure has already moved to Ethernet and IP. Carriers need to look beyond TDM, frame relay, and ATM for network user interfaces if they want to truly embrace a credible managed services partnership at the network layer and above the network layer.

Fourth, the applications riding the enterprise network are becoming increasingly dependent on Web-based interfaces like XML and VXML. With the adoption of Web-based protocols and Web- based user interfaces, the enterprise's back office data, applications, and systems are also evolving concurrent with the communications systems evolution. Businesses will depend on middleware, an operating system, or a mix of both to connect their databases with their applications and to connect their applications to the end user's unified communications portal. Under this model, the carrier's network can provide the middleware to connect data with applications and applications with user portals; however, providing this service represents a radical departure from most carriers' current network plans. Note also, under this model voice calls are folded into other real-time communications and become "just another application," representing a threat to the carriers' core voice business.

Fifth, service providers must understand how the enterprise communications and IT applications will come together. The converged user interface will be a unified communications portal with options for graphical and audio capabilities. Following the principles of unified messaging, unified communications portals will be expected to work with the network to intelligently select the device- appropriate user interface format. In this environment, SIP will provide the network with concurrent, multimedia session management. Today's "quadruple play" of voice, video, data, and wireless becomes more than an exercise in bill print operations. Future networks will be required to select the right format (data, voice, video) and send it over the right delivery network (wired, wireless Ethernet, or cellular) based on the user's portal type and the user's personally defined "reach me" rules.

Applications convergence opens new revenue opportunities for service providers in the form of managed and hosted converged services. However, the ability of enterprises to develop sophisticated converged applications quickly means that service providers must develop compelling services and business models to entice enterprises to purchase managed converged services rather than build and operate their own.

While some services such as unified messaging can be offered to the mass market, most market opportunities will be defined by the business nature of the enterprise or organization. For example, hospitals and credit card companies both require customer accounting, but a hospital employee will also need access to patient medical records, whereas a credit card company will need access to credit scoring systems. The bad news is that there is no single "killer application." Applications will be developed and accepted by each vertical market.

Adoption curves will also be complex because they will be measured both by the size of the business and by the organization's willingness to adopt something new. Take, for example, business adoption of the personal computer. If history repeats itself vis-à- vis technology adoption, then large businesses will test and accept the application, followed by adoption in smaller organizations with a tolerance for new technology, followed by adoption in the remaining vertical market.

Revenue opportunities for the service providers depend on how quickly they can anticipate and meet target market needs both by vertical and by size. Target market sequencing is especially important

because “killer applications” will vary according to each vertical market and the size of the enterprise. Tracking and sequencing these target markets will require skills not typically found in service provider staffs.

In addition to designing attractive new converged services offerings and packages, service providers also must consider how to provision, monitor, manage, and bill for them. Current service provider OSS/BSS infrastructure is not designed for services based on applications convergence. In fact, they are barely adequate for traditional services. Reviewing, overhauling, and replacing these systems is a painstaking and time-consuming undertaking critical to the success of these new converged services offerings. Yet few service providers have made this a priority.

The bad news is that most service providers’ operational support systems and business support systems are monolithic and lethargic. Conceived of and deployed for voice circuits, data circuits, minutes of use, recurring charges, and the occasional non- recurring charge, a carrier’s OSS/BSS is ill equipped to provide support for multimedia applications or for network conditions that change on a per-session basis. The good news is that the same information technology flexibility offered to a carrier’s customer is also available to the carrier.

As for changes in their business practices, service providers must begin to understand the IT evolution going on in their customer base and begin to partner with targeted customer segments to understand emerging vertical applications. Only then can the service provider sequence the opportunity and adopt the requisite support.

In summary, applications convergence is the next step for businesses that have embraced network convergence. The evolution of application convergence and its component parts has already provided the enterprise with substantial savings in employee time and has improved customer service levels. As businesses move to further integrate their data applications and information with unified communications portals and business processes, the effect on business efficiency and customer service will be profound. To design and develop compelling services based on application convergence service providers must begin now to evolve their network engineering and architecture, develop new skills to target and sequence the market opportunity, and prepare their OSS/BSS infrastructure to support these new service offerings.

Recommended Actions

Vendor Actions

- Service providers must design new service offerings based on applications convergence. This will require reviewing their own competencies to determine the most lucrative types of services for their particular portfolios and markets. It will also invariably require retaining technical expertise with Web- based and IP-based protocols such as XML, VXML, and SIP.

- Service providers must engineer and evolve their network to offer more than network services. They must prepare to offer data hosting, applications, and middleware that connects the data with the application and intelligently routes the applications session to the appropriate, user-defined portal.

- Service providers must determine how they are going to position their services against private solutions. This will involve leveraging their strength in data transport. But it will also require the development of new business models to enable them to offer these services profitably at a reasonable cost to customers.

- Service providers must determine how they are going to provision, monitor, manage, and bill for services based on applications convergence. A new OSS/BSS infrastructure will be required, as will new methodologies and definitions for service level agreements and customer satisfaction.

User Actions

- Enterprise customers should investigate the costs of developing their own converged applications. The costs of study, planning, design, system integration, and ongoing staff training and development are all part of the overall cost of converged applications.

- Enterprise customers should query their service providers to determine the service providers’ understanding of and readiness to provide services based on applications convergence. When determining whether to “make or buy” these services, users should consider type and features of the offerings, delivery time, service level assurance, maintenance and upgrade options, as well as price.