

The Emerging World of Server-Based Telephony Products

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Hardly a day passes that another company announces a new, server-based telephony system. The trade magazines are full of hyped-up product announcements, test drives, and "best of" awards. Ever since server-based telephony has arrived, there have been bold statements made that the "PBX is dead." While such statements have proven to be untrue, many server-based telephony products have moved into the mainstream. Nearly every major telecommunications manufacturer has jumped aboard the Windows NT bandwagon to bring a number of these applications to market.

What is server-based telephony? It is many things, for we have had server-based telephony around for years. Applications such as Voice Mail, Voice Response Units (VRU), Integrated Voice Response (IVR) and Computer Telephony Integration (CTI) all use PC/Server technology as their base operating platform. Most telephone systems use adjunct PC's for specialized applications such as automatic call distribution and Call Accounting Systems (CAS).

Many things have changed in the development of systems that handle the telephony functions usually associated with PBX's. These include:

- Connections to the public network (such as POTS, T-1, ISDN)
- Standard phone features like call forwarding, conference, speed dial, pick up
- Automatic call distribution
- Voicemail
- System administration

In addition, there are many advanced features available on these platforms that typically reside on adjunct systems:

- Integrated Voice Response (IVR)
- Computer-telephony (screen pops, screen transfers)
- Call recording (all calls or selected calls)
- Software phone on the PC
- Fax server
- Web server gateway
- Predictive dialing

Most server-based telephony applications provide the telephone-side connections as well, via analog extensions, proprietary digital extensions and voice-over Internet protocol connections.

While most manufacturers have chosen Windows NT as the operating system, the actual voice processing application can be written in a number of different programming languages including Visual Basic, C++ and JAVA. The telephone interface cards range from "off the shelf," such as Dialogic or Natural Microsystems, to proprietary cards that are manufactured for the vendor. Most cards, whether proprietary or off-the-shelf, support analog telephone functionality on the line-side

of the switch that is greatly enhanced by the use of a PC based "soft phone."

Circuit-Switched Vs. VoIP Systems

The major distinction among server-based telephony systems on the market today is the connection of the voice calls to the Call Center user. There are two types of voice calls:

- Circuit-switched
- Voice-over Internet Protocol (VoIP)

The circuit switched voice call is the one we are most familiar with today. The connection can be analog, using a single line telephone set, or digital, using a proprietary telephone set. The voice call is connected (switched) to the Call Center over a dedicated extension line (circuit). There are some very good reasons for using this approach. For example, the phone call can always be connected, even if the end-user's PC is not operating. There is a strong sense of familiarity with this type of architecture. We all know how to answer a ringing telephone and how to place an outgoing call on a telephone. The technology that supports this type of telephone switching is well developed, highly reliable and easy to procure.

The second type of architecture encountered in server-based telephony systems utilizes a technology known as Voice-over Internet Protocol (VoIP). This technology converts the voice signal into data packets that are transmitted to the user's PC over the data transport system (LAN/WAN). The PC then converts these packets into speech using the sound card in the PC. The user plugs a handset/headset into the sound card in order to communicate. The advantage of this architecture is the simplicity of the configuration. If a user is connected to the network, he/she can receive calls.

Call Centers need to decide which of these two architectures – if either- is suitable for their business application. This decision can only be made after careful examination of the considerations below.

1. How does your center service the customer?

Is yours mainly a voice-oriented Call Center or is your primary interface the Web? If you are a Web-centric organization, do your agents need access to information on the Web that will assist in the servicing of customers? Does your company receive a large volume of electronic communications, e-mail or fax? Web-centric organizations may find the VoIP architecture more responsive to their needs.

2. Which technology will be best supported by the center's infrastructure?

Most server- based telephony systems are based on the WinNT operating system for both server and client applications. Can your IT infrastructure support NT? What type of desktop system is deployed at the agent desktop? Does your Local Area Network (LAN) have the bandwidth to accommodate additional client/server traffic? In the case of VoIP, does the speed of the current LAN pose any problem with potential latency issues for voice calls? Can your IT organization support the hardware and software platforms of these systems? What impact would any upgrade strategy of the other IT systems (such as E-mail, mainframe, etc.) have on the telephony server? A careful examination of these topics will assist in ascertaining the level of support required from the vendor as well as in costing the project, including infrastructure improvement.

3. Which architecture best supports the long-range goals of the organization?

What is the growth plan for the Call Center? Will growth continue in the same site or be distributed over a wide geographic area? If so, it is important to note that not all systems support technology required. Does your company anticipate using work-at-home or mobile worker strategies? Can the system support your anticipated growth? Some architecture is limited in total agent capacity due to the number of expansion slots available on the server. With growth comes the need for other applications such as a forecasting and scheduling system. Can the system integrate with these adjunct applications?

4. Which architecture produces the greatest return on investment?

The components of this evaluation must include these factors:

- Initial cost of the system
- Cost of any infrastructure improvements required to support the application
- Cost of ongoing support (maintenance and upgrades) of system hardware/software
- Cost of internal support of the hardware/software package
- Cost of training - both user and administrative - on the application
- An evaluation of anticipated cost reductions in manpower that the system will create

Products and Players

Once you determine which type of architecture will best support your Call Center, determine which specific product is the most appropriate. Many of the questions listed previously need to be considered when making this decision. In addition, evaluate each product's toolkits that support the planning and performance evaluation of the Call Center. Real-time and historical reporting capabilities vary from vendor to vendor. Ease of use of system administration is another key factor to consider.

So, who are the players in this new server-based telephony arena? While there are too many companies to mention all of them in this article, I will highlight some of the major players.

First, in the area of the circuit-switched telephony servers, Rockwell has announced its Transcend system, which targets the under 80-seat Call Center. Mitel has announced its new entry, the SX-2000NT, which incorporates many of its current hardware and software offerings on a WinNT platform. This product also targets the under 100-agent market. For even smaller Call Centers, Altigen Communications' AltiServ system provides PBX functionality along with ACD and voicemail.

Interactive Intelligence is making a big splash with its offering, the Enterprise Interaction Center. This platform currently supports up to 250 agents on one server with plans in the next release to be able to link multiple servers together. This product includes PBX functionality, ACD, IVR, predictive dialing, agent recording, CTI, Web integration and much more.

In the VoIP market, everyone is an "up and comer." The VoIP approach is being fueled by a couple of trends in the industry. First and foremost is the incorporation of Web interactions into many Call Center strategies. The Web is becoming the new IVR, allowing Call Centers to learn more about the needs and desires of their customers. Recent surveys have shown an enormous acceptance of the Internet as a medium for retail purchasing. Businesses that transact commerce on the Web must provide customer care to these clients. The most easily deployed method of communication is traditional e-mail, followed closely by e-mail "text-chat" applications. Server-based telephony systems based on VoIP technologies are prepared to handle this traffic, and are

positioned to handle voice calls from the Internet when that technology becomes more robust.

There are several vendors leaping into the VoIP market, most notably Cosmocom with its Windows NT based entry - CosmoCall Version 2; Apropos Technologies' Apropos Version 4; and PakNetX's Windows NT based PNX ACD 2.0. All three of these systems feature the ability to queue live calls (both circuit switched and internet telephony calls), text-chat sessions, e-mail and video calls. While these offerings are currently targeted at smaller Call Center configurations, expect to see them enter soon into larger and more complex Call Center environments.

A Tool Worthy of Attention

Our industry is re-inventing itself - taking advantage of increased technological capabilities in order to deliver greater customer satisfaction. We need to constantly investigate and evaluate the tools that provide such capabilities. Server-based telephony is one tool worthy of your attention.

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