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Call-Center Shootout

Xyz Corp., a real healthcare company in the United States operating here under an alias, wants to bring VoIP enterprise wide. Initial rollouts are to occur in their call center and ultimately grow to include the entire company, an over 20,000 seat installation.

In an effort to examine what several top players in today's converged contact-center marketplace are offering, we sent out an RFI on the Xyz job. We then analyzed the various responses with the insight of a team of network experts, including the telecom managers from the secret user. Here's what we found.

by David Greenfield, Executive Editor, Network Magazine

It's got email, Web access, Instant Messaging (IM), and fries your eggs to boot. Converged contact-center vendors make some pretty tall claims and pack in a ream of functionality these days, but how's a network technology manager to sift through the product details and demos to find solutions that make an impact?

Simple. Issue a Request For Information (RFI), which is just what *Communications Convergence* and *CommWeb* did. A real, but anonymous healthcare-related company in the US (see "Who's Buying" for more information) was shopping around for a new VoIP solution for its Meridian 81C and called in yours truly to help with the analysis and planning.

The requirements were intriguing and realistic. A planned migration from an existing PBX, let

alone a Meridian, was about as real world as you're going to find. The agent set was low, 150 users on one site, but plans to grow to 400 users would complicate vendor response.

Vendors pitching their low-end contact-center solutions at a great price would face the risk of not being able to deliver enough functionality as the site grows.

At the same time, high-end solutions would be over-kill.

Vendors would have to find a way to thread the sort of needle that many managers will be presenting them. And of course the user was fascinating because its IT manager had the vision to embrace a converged contact center with all of the trimmings.

After hours of interviewing and analyzing their requirements, we developed a RFI that reflected their needs. We issued that RFI to 10 vendors; all but **Cisco** (see "The Silent Giant") and **EADS Telecom** replied. We even considered an outsourced solution (see "The Outsourced Play"). We then took those results and, with insight from telecom managers in the field, analyzed those bids up, down and center (see "The Bids" table).

PROCESS & PICKS

We concluded, finally, that Xyz should look at a two-step process.

Step one, cleave the underlying VoIP network from the call-center application. The Meridian remains a highly reliable switch and we couldn't think of an overriding reason to forklift upgrade the environment to VoIP. Still, we do see a need to account for a complete IP Telephony transition at a later date, and whatever solution was selected would need to consider that strategy.

The second step was to evaluate the speeds and feeds of the call-center environments. Each of the companies evaluated delivered excellent solutions depending on the customer requirements. Xyz's IT manager in particular wanted: to minimize his migration time; demanded multisite support; preferred a solution integrating voicemail, email, IM and voice; and initially wanted to provide at least 99.99 percent uptime, but after additional consideration preferred 99.999 percent uptime.

Against those requirements we saw definite differences amongst our proposed solutions.

All vendors claimed to offer multimedia messaging against common queues that worked across multiple sites, though not all

Who's Buying: The Xyz Profile

Xyz Corp., a healthcare company in the United States, wants to bring VoIP enterprise wide. Initial rollouts were to occur in the call center (100 seats today) and ultimately grow to include the entire company, an over 20,000 seat installation. The RFI covered the call-center, though the winner of the RFI was likely be the preferred choice for enterprise-wide deployment.

Under the current requirements, the agents sit in one site and are equipped with Nortel digital phones, connecting into an 11-year old Meridian Option 81C release 25.2 and an Octel voicemail system. Existing call-center software was of the "older" kind, says the company's IT manager.

The main reason for wanting to look at other systems besides the Meridian is because the Meridian is "costly, cannot upgrade or install software, and many times we need to depend on telephone distributors to do installs," says the IT Manager. He also points out that many times the Meridian proved frustrating in its ability to deliver the reporting and analysis metrics he was looking for.

The call center is comprised of three groups of agents.

Customer-service agents provide first-line customer support for company sold products and services. Today there are 50 customer-service agents, with plans to grow to 300 agents.

Product-support agents service queries relating to services contracts, device returns and serve as technical specialists, providing engineering support for medical and other support equipment. Today there are 30 product support/tech service agents, with plans to grow to 125 agents.

Miscellaneous agents encompass travel and IT agents. Travel agents provide airline reservations, hotel booking and other travel related services and IT Support agents service general IT support queries. Today there are 20 of these miscellaneous agents, with plans to grow to 125.

The data network is built on equipment from Cisco systems. The networking equipment and cabling are capable of handling VoIP. No new data equipment was to be included in this RFI. Four PRIs service the call center today. There is one trunk group and the channels are dynamically allocated for inbound toll-free and outbound long-distance calls.

Currently all toll-free numbers terminate to AT&T using DNIS into Meridian Option 81C in Xyz's headquarters and then directed to Meridian Mail voice menus. Customers are prompted for DTMF (touchtone entry) menu options. The customer enters menu options to self-direct their inquiry using Customer Controlled Routing (CCR) to the best first available agent or zeroes out and gets transferred to an agent or switchboard operator. Agents service calls using Meridian Terminal Emulator (MTE).

The Silent Giant

Cisco did not submit a bid and probably for good reason. The RFI requirements would have hit Cisco IPCC right on the seamline between the Enterprise Edition 5.0 and Express 4.0: the Enterprise edition is probably overkill for this job, aimed at environments starting at 300 seats, while Express targets environments with under 150 agents.

While Express would seem like the right fit, it's not without significant seat limitations. Aside from the seat limitation, the IPCC Express is also limited to a single site. Enterprise edition can scale to multiple sites.

Failover and fault tolerance are also big differences. With Enterprise edition, Cisco claims to offer full failover and fault tolerance even for active sessions. With Express, there is no failover; just a backup system that gets instituted in the event of a system problem.

A similar pattern emerges with other features as well. Queuing for Enterprise Edition is enterprise wide and provided for email, web collaboration and Web Chat. Express' queuing is done site-by-site. It wasn't clear whether Express supports unified queuing for all media. Unlike Express, Enterprises' IVR lets users exit, perform a function (say fax back) and return to the queue without losing their place in queue.

It shouldn't come as a surprise then that there's a big difference in pricing as well as between the products. Cisco estimates that IPCC Express comes in at about 60% less than the Enterprise Edition.

provided every agent with that capability. Some solutions required additional investment to reach multi-site support or higher system fault-tolerance. Other solutions sacrificed on functionality to deliver a rounder mix of functions.

After a close analysis of the various bids and offers, it was felt that **Telephony@Work** most closely matched this particular user's requirements, followed by **Avaya** and **Interactive Intelligence (I3)**.

Telephony@Work's distributed architecture gives it the multisite capability and resilience built in. The company also delivered tight integration of voice, email and IM, which is what this particular customer required. Telephony@Work also integrates nicely with the 81C.

And then there's the price tag. Telephony@Work was 20% less expensive than **Nortel's** bid. That didn't make Telephony@Work the least expensive solution, Avaya took that distinction followed by **Rockwell** and **Interactive Intelligence**; yet it did give Telephony@Work a top-notch blend of functionality and price.

Siemens, **Nortel**, and **Avaya** all demonstrate a clear sense of packaging, hand-holding and service delivery. There's a level of assurance with going with a brand that's well established and known. Those benefits should not be discounted. It wasn't clear whether Telephony@Work delivered the same level of service.

Functionally, Telephony@Work's reporting is adequate, but ultimately may limit the customer. An open interface lets statistics and information be exported to outside report generators. The software predictive dialer and IVR capabilities may show signs of limitations in larger environments, but met our customer's requirements nicely.

SINGLE SOURCED SYSTEMS

Despite the Xyz manager's initial reaction and desire to move off of the 81C, they wanted to consider Nortel's call center solution along with the solutions from other traditional PBX suppliers, namely Avaya and Siemens. Beyond any technology benefit, probably the biggest asset in going with these vendors is the assurance of dealing with a major vendor with experience and resources to execute on a major call-center deployment.

The Nortel bid called for an upgrade to the 81C to Succession 3.0, turning the switch into an IP converged platform. All of the additional applications - the call center software (Symposium), the IVR and ACD software (Symposium Call Center Server Software and MPS100, respectively), the unified messaging system (CallPilot), and the telephony manager (Optivity) were to run off of servers provided by Xyz.

Nortel included a mix of soft and hard clients in the bid. Fifty i2004 IP Sets and fifty i2050 softphones with USB headsets were included. Sixteen remote office agents were also included.

On a pure functionality level, the Nortel bid scored high, offering Symposium as a blended contact center with support for voice, Web chats, and email. IM and presence are integrated together. Symposium offers the necessary self-service functions that Xyz required, including faxback (fax server was not included), IVR and call-routing functions. Skills-based routing and ACD sophistication met the customer requirements.

Reliability and remote access were also strong points. The Succession leverages 81C's redundancy -- which very much pleased our panel. System reuse is high and offered Xyz a clean migration to the VoIP as necessary.

Remote access, provided by the IRemote 9115, is more expensive than other solutions, but delivers the necessary hardware to switch to alternative lines in the event IP quality of service drops below acceptable levels.

The question, however, with the Nortel bid was complexity and in turn pricing. Succession uses a centralized architecture around a single server and database per site mode, complicating configuration of multiple Succession servers against a common database. Adding multisite capability is possible, but requires additional software (the Nortel Network Controller) of another \$28,000 list price, with actual price probably closer to \$20,000.

Deployment times are said to be quite high as well. Nortel argues that with Symposium Express deployment can go in "two weeks," but the vendor did not pitch the Symposium Express, which is bounded to 150 active agents and offers limited messaging capabilities. Xyz's requirement to scale to 400 users forced Nortel to bid the Symposium Call Center Server, which even Nortel's conservative estimates put deployment at 30 to 60 days. A far cry from user projected deployment of nine months.

Part of the problem is that, although Succession offers a common marketing brand, it's actually composed of several different products, making the integration that much more difficult. Furthermore, external voice-recording servers connect to the Meridian through external tie lines, which, if not engineered properly, may result in blocked calls to the server.

The natural alternatives to Nortel were the two other legacy PBX vendors, Siemens and Avaya.

Siemens proposed connecting its HiPath Procenter to the the Nortel 81C through the HiPath IPortal, which provides VoIP support for

The Outsourced Play

Running a contact center in house isn't the only solution. Numerous vendors now offer outsourced contact centers using software from vendors such as Telephony@Work or CosmoCom. We asked CosmoCom about a test case user's requirements. Here's what they had to say.

CosmoCom's CosmoCall Universe (CCU) is a multi-tenant call-center solution that sits at the Call Center service provider's premises. Agents can be located at the customer's premises or fully outsourced to the call center provider. The customer, in this case Xyz as profiled in our RFI exercise, would connect to the call center provider via IP links.

Although the platform would reside at the service provider, Xyz would still have control over its own virtual ACD.

The vendor claims the major contact center function areas are available in this On-Demand environment, including ACD, IVR, CTI, Recording, realtime and historical reporting, and predictive dialing. Calls/emails/IMs/faxes will automatically be routed to the appropriate agent according to the routing rules set up by the administrator, regardless of location.

CosmoCom declined to formally answer our bid.

call-center agents and supervisors and a gateway to existing Nortel systems.

The call center would be driven by the HiPath ProCenter V5.1 Advance application, which provides integrated, multimedia, skills-based call routing and management (including web chat and outbound/callback functionality). Unified messaging was delivered by the HiPath Xpressions V3 Standard application into a Notes mailbox. The HiPath ComResponse web-based voice application platform provided DTMF auto attendant and basic IVR functionality. Call Recording was provided by Verint Ultra Express. Agents were equipped with optiPoint 410 phones and HiPath ProCenter Agent Desktop.

The Siemens bid came in the second highest of the group and for good reason. The company was one of the few to include call-recording within the bid. Remove this and Siemens would have been in the middle of the pack on pricing.

On the other hand, Siemens did not include presence and IM, functions of its OpenScape product, in the bid price. OpenScape was available, but for \$400 per seat. Even then Xyz would have required deployment of the Microsoft platform -- Windows Server 2003, Live Communications Server and Windows Messenger. Siemens is working on a Notes version of the software.

Agent licenses were another open question for Siemens. The company provided 100 agent licenses for voice, but just 10 licenses for email and web. Whether those licenses would prove a limitation and require additional access was not ascertained.

Avaya was the only vendor to propose two solutions -- a tactical one and a strategic one. Both solutions require Avaya's voice response system, Avaya Interactive Response (IR), and Avaya's Contact Center software, Avaya Interaction Center (IC) with Avaya Operational Analyst.

AVAYA TACTICAL

Under Avaya's tactical solution, Xyz continues running the existing Nortel network and connects the IR directly to the existing 81C. On the data side, Avaya connects the 81C to the data network and adds the Avaya IC server and agent to the data network.

Calls to agents are received at the 81C, sent to Avaya IR for IVR treatment and from there sent through the 81C to the Nortel phone. At the same time the Avaya IR is sending the call to the 81C, the IR passes the information to the IC server, which runs any necessary data dips against Xyz's databases and pops the information on the Agent's screen.

As Xyz Corp's requirements grow, Avaya connects an S8700 Media Server, what's basically a hardened Pentium server, running Avaya's Communication Manager 2.0 call control software, through Avaya's G650 Media Gateway. The IR and IC along with Avaya IP phones connect to the S8700. Both the existing Nortel users and Avaya users run the IC agents on their PCs. The company claims Avaya Communication Manager 2.0 can support up to 5,200 agents.

Functionally, the Avaya propositions are notable on several fronts. Component pricing on the solutions will likely be higher than estimated to account for unaccounted Nortel costs. Both solutions require the 81C to connect to the LAN, which, based on the information provided by Xyz, suggests an upgrade to Symposium, or roughly another \$20,000.

Depending on configuration, the strategic solution will also require to double the expected line cards placed in the 81C. This is to accommodate the incoming calls passed from the 81C through the G650 to the Avaya environment, where the call routing is occurring. As a result of this architecture, it was determined that Xyz should most seriously consider the Avaya proposal when the bulk of traffic terminates at handsets or softphones connected directly to the S8700.

The Avaya Interaction Center provides a common distribution engine, called Workflow Service, which Avaya says is capable of distributing all media. Separately, though, Avaya notes that IM is provided by IBM's Lotus Instant Messenger (LIM), an additional expense. What's

more: Avaya's licenses only provide 10 users with Web-calls and Email access.

CONTACT CENTER SUPPLIERS

Two major contact-center suppliers, Rockwell and Genesys Telecommunications Laboratories, replied to our bid request.

Both supply extensive reporting and contact-center functionality and should be seriously considered for large scale enterprise deployments. Their breadth of functionality was likely to be overkill for this particular deployment, however.

Rockwell FirstPoint Contact proposed its FirstPoint Enterprise Solution. It's a multi-channel contact center and aimed at integrating with a Cisco CallManager (CCM) environment.

The biggest challenge with FirstPoint is pricing. The base system was \$235,590, not including the CCM investment. Rockwell's Convergence Desktop was not provided in that price and only five desktops were given email and IM functionality. Adding another 100 such desktops would run another \$140,000.

Genesys proposed a joint solution with 3Com calling for the deployment of Genesys' IP Contact Center V6.x as the call center solution and 3Com's VCX 7000 version 3.1 as the voice switching platform. Genesys claims the IP Contact Center (IPCC) can work equally well with the 81C or other voice switching platforms.

More specifically Genesys proposed its Enterprise Routing Solution (ERS), with optional high-availability components, IP Contact Center (IPCC), Internet Contact Solution (ICS), Genesys Voice Platform Enterprise Edition (GVP EE) and Workforce Management (WFM). The Genesys solution comes from a highly reputable vendor with an established track-record and a huge price tag. The cumulative agent pricing alone ran \$4,375; that's without the underlying VoIP infrastructure. Functionally, the solution is

attractive, but the price point was too prohibitive for the customer.

INTEGRATED CONTACT CENTERS

The final category of respondents was the “contact centers in a box.” vendors, Interactive Intelligence and Telephony@Work, which delivered the most affordable devices and, at the same time, the ones with some of the biggest questions.

I3 recommended connecting a new version of its Customer Interaction Center (CIC) to the 81C via a tie-line. Agents would run Polycom IP500 sets (other sets are also available). Ten phones were provided for supervisors. Each agent would be equipped with I3’s CIC clients. ACD and IVR are included in CIC. The company also included Interaction Marquee and e-FAQ, which provide knowledge base tools and customer facing Web services.

CIC has undergone a major rewrite. The product was the only one reviewed to claim to be an all SIP solution. Prior to Version 2.3, CIC was architected as a proxy server where control of the

media stream is released once the session between the caller and the callee is established.

SIP adds dramatic scalability, allowing thousands of active stations off of a single server, but at the same time does not provide a central point of control. One I3 engineer candidly admitted that, with the existing software, applications requiring more advanced call control than a typical agent-to-customer call were quite cumbersome. Specifically, he noted that call recording required placing probes strategically through out the network to acquire control of the session. Call monitoring and tracking were also complicated by the proxy design.

This new version now avoids the problems inherent in a SIP proxy design using a Back-to-Back-User Agent (B2BUA) architecture. B2BUAs retain control of the media session once a connection is established, giving them greater control of the sessions than a SIP proxy. At the same time, the B2BUA introduces a single point of failure.

Table of Bids

Company	Discounted Total	Telephone	Agent Software	ACD/IVR	Unified Messaging
Avaya (Tactical)	\$211,225	Not Provided	\$192,675	\$18,550	Included
Rockwell	\$244,100	Not Provided	Included	\$210,100	\$30,000
Interactive Intelligence	\$364,678	\$30,250	Included	Included	Included
Telephony@Work	\$385,122	Not Provided	\$250,000	\$20,000 (data center license)	Included
Nortel	\$478,529	\$42,700	\$51,920	\$130,211	\$39,750
Avaya (Strategic)	\$484,156	\$36,036	\$192,675	\$106,566	\$30,000
Siemens	\$494,310	\$38,168	\$115,550	\$239,422	Included
3Com – Genesys	\$605,968	\$43,500	\$437,500	\$43,200	Included

Budget Tips

1 Check your agent functionality

Most contact-center vendors will supply voice support for all agents, but not necessarily include the same for Web and email access.

2 Watch for call recording

Probably obvious, but call-recording equipment and software can account for a quarter of a bid's price.

3 Differentiate between out of the box and built in functionality

One wise software engineer once said: "Hey it's software. We can do anything." Often the question isn't whether a vendor offers a feature, but how much time will be required to implement a feature.

4 Look at the total cost of deployment

Component pricing is just part of the overall equation. Deployment times and complexity dramatically change the price on these systems.

5 Scrutinize Multisite Capability

Running a call center in one location is one thing, spreading to a separate location implies a huge range of technical and pricing issues. Be sure to look at licensing arrangements, additional software and hardware costs, and then the associated WAN costs for supporting the deployment.

Telephony@Work delivers its call-center platform CallCenter@nywhere (CC@) in two versions, Service Provider Edition and Enterprise Edition. In this case the Enterprise Edition was pitched.

The Telephony@Work bid is architected around a single CC@ server connected to the 81C and an external VoIP gateway and four tie lines. No other telephony-specific server is provided, though additional file and Web servers are required. Incoming calls to the Meridian are directed to the Call Center Server. The ACD capabilities of the 81C are not used. Agents need a Web browser only.

The company claims CC@ is a fully distributed, fault tolerant design where processes can be mirrored and run in parallel on different servers, at different locations in the network.

All server processes listen to all of the traffic going to the ACD server master. So master and mirror processes maintain live state tables. If a server loses connectivity, then there's a license manager with keep alives that promotes the mirror to start broadcasting. In this way, every server is hot mirrored. The company claims that a mirror takes over with no loss in reporting and process capabilities.

CC@ hits the seam-line of Nortel's Symposium Express (under 150 users) and Symposium (over 150) call-center offerings. The bid included all of the necessary hardware and software and yet still managed to offer a price point well below the competition. A major reason for this was the reuse of existing Meridian phones, which meant that no phone charges were included in the bid. Realistically, Xyz will have to carefully consider whether the installed phones provide the necessary functionality.

CC@ is a Web-based solution, which both has the benefit of lowering end user management costs and eliminating the need to deploy/maintain end node software. Overall, as a Web-based application, CC@ is remarkably open and malleable, a fact independently verified with a major CC@ customer. As long as information can be exported or imported from a Web page, the information can be integrated with CC@ by someone with nominal development background.

How Do You Increase Contact Center Revenues AND Slash Operating Costs?



UNSHACKLE YOUR POTENTIAL

Most vendors require a lot of time and money to program, integrate, implement and maintain multimedia contact centers. They also can't implement changes without costs, risks and delays. And by the time "upgrades" are delivered, your needs may have changed. Telephony@Work technology leverages traditional needs-analysis questions yet allows your managers to define (or redefine) their answers via browser menus - in real-time and at no cost. This enables them to provision or modify any business process on-the-fly in order to increase efficiency on any communications channel - phone, fax or Internet. As you might expect, increased revenues are the natural result of being able to "fix" broken or strained business processes on-demand.

Comprehensive Multimedia Inbound & Outbound Technologies: Integrated-By-Design™

Communications Convergence
2004 Call Center Shootout
determines Telephony@Work offers a
better solution for the Nortel Meridian
than all other vendors
- including Nortel!

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