



Hosted Contact Centers are Ready for Prime Time

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About DMG Consulting LLC

DMG Consulting LLC is a strategic advisor to companies large and small. Our mission is to leverage technology, process and people to optimize operational efficiency, sales and profits for our clients. Our actionable strategies and tactics effect change in clients' internal process and technology to maximize the returns from all customer-facing activities - sales, marketing and customer service. Our customers include Global 2000 companies such as MCI, Nortel Networks, RealNetworks, Stride Rite, J. Jill Group, HBCS and Roadway Express.

DMG Consulting LLC's business strategists have an average of 20 years experience in customer relationship management (CRM), contact centers and building customer-focused businesses. We understand the power of harnessing customer data and the contributions that contact centers make to the company.

Our consulting engagements with more than 2000 end-user organizations and our hands-on operational, technology and financial expertise give us deep insight into what users want and need in contact centers.

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1. Executive Summary

Hosted contact center solutions are capturing the interest of IT and contact center managers around the world with their unique value proposition. This white paper examines the benefits of hosted contact center solutions, reviews and compares the underlying technologies and provides criteria for selecting the right solution. All organizations – carriers, outsourcers, enterprises and governments – considering either new investments or upgrades to their existing contact center infrastructure should read this paper. Hosted contact center offerings altering the market dynamic and redefining the rules for contact center investments.

2. Hosted Contact Center Emerges

The hosted contact center market has been energized recently by new product offerings from Avaya, the leading premise-based contact center infrastructure provider, and Teletech, a leading US-based outsourcer. The entry of these vendors into the hosted contact center market is a response to growing demand from carriers and service providers around the world for hosted contact center solutions. The next few years will bring hosted contact center customers increased value, as technology vendors and network service providers offer increasingly feature-rich, architecturally strong and dependable multi-tenant solutions with quantifiable benefits. DMG Consulting LLC predicts that by 2007, 20% to 30% of all new contact center seats will be hosted.

Hosted contact center solutions have been on the market for close to 9 years, but adoption began in earnest in 2004. When hosted contact center solutions were first introduced in the mid-1990s, they were met with an appropriate level of skepticism, as were most hosted applications. Market acceptance of internet protocol (IP)-based contact center technology and the growing need for flexible, multi-site solutions are pushing companies to look for cost effective alternatives to premise-based offerings. Product enhancements, improvements in the hosting business model and proven results are now attracting the attention of end users in the public and private sectors, companies large and small around the world.

3. It started with CENTREX

The history of the hosted contact center market dates back more than twenty years to the CENTREX service, which is still being offered today. This hosted private business exchange (PBX) offering includes rudimentary automatic call distribution (ACD) functionality that gives companies basic call queuing and routing capabilities. The primary attractions of CENTREX were its ease of deployment and its elimination of the need for a dedicated technical staff to support the switch. Users simply needed telephones and had to explain how they wanted their calls routed within their shop.

CENTREX was fine for user organizations that required only limited call center capabilities. The only choice for companies that needed more advanced call routing and

queuing features was to upgrade to a premise-based call center system, if they wanted to continue to handle these functions in-house. As many small and mid-size companies or departments within larger companies did not have a technical staff to support premise-based systems, moving beyond CENTREX presented technical and staffing challenges, aside from the expense, which often exceeded their budgets.

While some companies invested in premise-based call center systems, they often had to compromise functionality to control the cost. At a minimum price of \$2,000 to \$5,000 per seat for a functionally-rich call center solution, something had to give, and it was often advanced skill-based routing, computer telephony integration (CTI), recording or other related capabilities. Companies didn't want to compromise, but didn't have a lot of alternatives. Reasonably priced call center systems were available as an option on a PBX, which offered a broader range of capabilities and flexibility than CENTREX, or with plain old telephone systems (POTS).

4. Premise-Based vs. Hosted Contact Center Solutions

Companies now have many good alternatives for both premise-based and hosted call/contact center systems.

4.1 Premise-based contact centers

A premise-based contact center is installed at the customer's site. The system must be implemented by the customer or a systems integration (SI) firm and maintained on an ongoing basis. The customer is responsible for wiring each agent's desktop, servers, software and integrating the system to its carrier or IP network. The user is also responsible for configuring and maintaining the contact center and all related components, including an interactive voice response system (IVR), CTI, email response management (ERMs), liability recording, quality management and many other applications. Technical support is required to maintain the system.

4.2 Hosted contact center offerings

Hosted solutions provide network-based contact center functionality as an on demand service – a network service provider (NSP), technology provider or outsourcing bureau implements and supports the switch. The hosted offering does not require wiring or implementation of any hardware beyond a PC, browser and phone. (It is possible to do the implementation with just a PC.) The user does not require technical support to maintain the application. In some situations, users are allowed to maintain the software and in others, all change requests are handled by the service provider.

5. Primary Differences Between Premise-Based and Hosted Offerings

Prospects looking for a new contact center system should consider many factors, including:

Business model – hosted, premise-based or outsourced,

Technology – which vendor’s solution delivers the greatest return on investment (ROI), and,

Service provider – from whom to purchase their solution. Many vendors now sell the same products and services.

The primary differences between premise-based offerings and hosted solutions are cost, total cost of ownership (TCO), architecture and scale. System users no longer have to sacrifice contact center functionality for convenience. Prospects should start by making sure all systems under consideration meet their functional requirements for today and for the foreseeable future.

5.1 Cost

Premise-based offerings are generally priced on a per seat or concurrent agent basis. Most premise-based vendors also charge licensing fees for each channel (i.e. phone, chat, email) and each system (IVR, CTI, recording). Additional costs include installation, professional services to customize the system, training, maintenance and major software upgrades.

Pricing models for hosted solutions vary. The majority of hosted solutions use a perpetual per seat/per agent scheme, per usage, or a combination of the two. Moreover, pricing can vary based on volume and functionality. Hosted solution vendors generally charge a set up fee and may also charge a training fee. Many of the NSPs also charge their customers for every requested change.

The “pay per usage” licensing model is unique and enables subscribers to pay only for licenses that are being utilized. Premise-based vendors generally offer licenses for each communication channel, while some of the hosting vendors charge one fee per seat, regardless of the number of channels used.

There are also vendors that charge concurrent licensing fees, which allows companies or NSPs with multiple shifts to reuse the same license. The best pricing model allows for both concurrent agent pricing and one fee for all channels. In that scenario, a customer doesn’t need to know exactly how many phone, email or chat licenses to purchase and can dynamically reallocate their use, as needed.

While every company needs to do its own lease vs. buy analysis, there will be a point where the accumulated monthly subscription costs of a hosted offering are greater than the one-time cash outlay for a premise-based system. In contact centers with more than 250 agents, this is likely to happen between years three and four; in smaller contact centers with less than 75 agents, it may take longer.

5.2 TCO

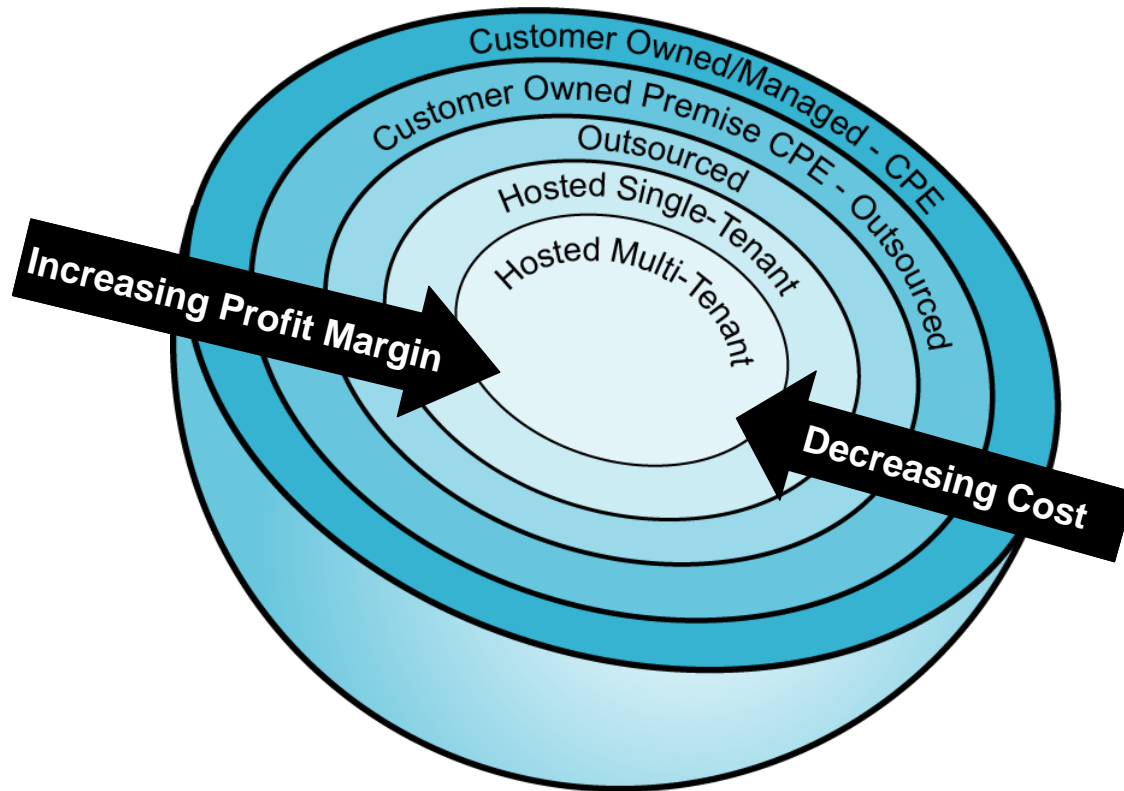
The TCO of hosted offerings is substantially less than for premise-based systems. Companies with premise-based contact centers require people to maintain their system, must pay annual maintenance and have to invest in upgrades periodically. Additionally, while hosting companies do charge for implementations, the cost and time involved is likely to be substantially less. There are hosted offerings that can be provisioned in less than one day.

5.3 Architecture

Premise-based contact center solutions require manual installation of software and the physical presence of hardware (i.e. servers) at the customer's site. While IP makes it easier to build multi-site contact centers, it's all done on a single tenant. A company that needs to partition anything besides the database will have to install separate systems for multiple users. Premise-based vendors do not support true multi-tenancy.

Hosted systems are increasingly utilizing multi-tenant architecture that enables multiple users with unique business processes, to reside in a common infrastructure. Multi-tenant architecture obviates the need to have separate servers for each customer. Subscribers/tenants are able to share common licenses and hardware while continuing to operate in a segregated environment. There are a variety of definitions and forms of multi-tenancy, but optimal performance is achieved when multiple subscribers (companies or departments) can run on the same server, but each tenant can see and change only their own administrative environment, routing and queuing rules and reports. A true multi-tenant environment also allows for system-wide software upgrades without service disruption and changes to one tenant without any impact on the performance of the others. See Figure One: Advantages of Multi-Tenancy.

Figure 1: Advantages of Multi-Tenancy



Hosted contact center solutions do not require the physical presence of any hardware or software beyond a PC, browser and phone.

5.4 Scale

Functionally-rich, multi-channel premise-based solutions have traditionally been oriented to large enterprises and not for small or medium size environments. Moreover, premise-based solutions require additional hardware to scale upwards.

The advent of multi-tenant or shared architecture enables providers to add both subscribers and capabilities by spreading applications across the shared network. Network-based shared architecture enables providers to support unlimited capacity while vendors of premise-based solutions must add additional servers, nodes or other hardware and software to increase capacity.

In a hosted model, subscribers are able to scale up and down, at will, very quickly, without adding hardware. They are also able to “rent” feature-rich contact center solutions that support multiple-channels and multiple sites regardless of whether the environment is two sites with two agents or 50 sites with thousands of agents. Hosted

offerings equalize the sales and service capabilities of companies regardless of their size.

6. Market Opportunities

The availability of hosted offerings picked up substantially in 2004. NSPs, outsourcers, premise-based vendors, government agencies, universities and enterprises have begun to invest in these solutions.

6.1 Network Service Providers

Hosted contact center offerings have captured the interest of NSPs, which continue to expand their product portfolios and provide a growing number of communications services to existing customers. As traditional carrier-based revenue streams continue to dissipate, NSPs are seeking new communication offerings that will enable them to leverage their existing networks. NSPs' sizeable customer bases and extensive distribution networks make them a very attractive target market for hosted contact center vendors. Hosted contact center vendors will increasingly turn to NSPs in their attempt to gain critical mass.

6.2 Large Enterprises

For larger enterprises, the principal attractions of hosted offerings are their lower TCO, rapid deployment and minimal impact on the capital budget. Companies that want to have their contact centers managed centrally will find the new hosted contact center offerings compelling, with little or no sacrifice of convenience and functionality. During the last couple of years, the capabilities of hosted offerings have improved substantially, although these functions differ greatly from each other and there is still room for improvement. Any company considering an investment in IP-based contact center infrastructure should add hosted offerings to its list of products to consider.

6.3 Small and Medium Enterprises (SMEs)

Like large organizations, small and medium sized enterprises (including smaller departments within larger companies) can benefit from contact center technology. However, the vast majority of SMEs do not use contact center technology. Budgetary constraints coupled with the lack of resources and expertise needed to support a switch have been the principal impediments to implementing premise-based solutions in SMEs. Hosted contact center offerings are now enabling SMEs to rent feature-rich contact center solutions that are flexibly priced, allowing users to pay per usage rather than on the per seat basis that is the norm for premise-based offerings.

6.4 Distributed Operations

The large number of multi-site and multi-national service and sales environments, companies with numerous branches and remote agents, is forcing companies to find ways to cost effectively incorporate these geographically dispersed groups into a centralized contact center system. Hosted solutions enable customer interactions to be routed to any agent, group or contact center, at any time and/or location. These solutions are based on thin-client platforms and allow agents, supervisors and administrators to conduct any contact center activity from any location using a web browser.

7. Selecting a Hosted Contact Center Solution

There are a growing number of hosted contact center infrastructure technology providers and more are expected to enter the market in the next few years. The providers include some of the incumbent premise-based contact center platform providers as well as relatively new entrants – vendors that have built solutions from the ground up during the past 10 years. As this is an immature market, the products and offerings vary greatly and there are significant differences in technology, functionality, pricing, installation and support.

7.1 Where to Start

Prospects considering hosted contact center offerings can turn to several types of vendors for solutions:

- Product Companies
- Service Delivery Providers
- Service Delivery/Technology Companies

7.1.1 Product Companies

These are technology companies that develop their own systems and sell them to network service providers, enterprises, government agencies or educational institutions. Product companies include Avaya, Cincom, Cisco, Contactual, Cosmocom, EchoPass, Five 9s, Lucent Client Care Division, Telephony@Work, TeleTech and Wicom.

7.1.2 Service Delivery Providers

These companies purchase hosted contact center systems from product companies, install them in their networks or facilities and then sell the contact center capabilities to their own clients. Service delivery providers include Angel.com, BT, Eagle, FT, ePLDT, KT, MCI, Promero, Inc., Qwest, Siebel (hosted), and Telus. Many more are entering this market on a monthly basis, as hosted contact centers are viewed as a growth market and a way for carriers to replace lost revenue streams.

7.1.3 Service Delivery/Technology Providers

These companies develop their own technology and sell it either to user organizations or to other service providers, using a variety of business models. Service delivery/technology providers include telecommunication firms and service bureaus. Among them are Cincom, Contactual, EchoPass, Five 9s, TeleTech and UCN.

7.2 What to Look For

Hosted contact center solutions must support multi-tenancy, multi-media and multiple sites. They must address time domain multiplexor (TDM) and IP transactions, as both are going to be around for many years to come. They must be functionally rich and easy to install and maintain, requiring little to no technical expertise of end users. And, they must not require more hardware than a PC, web-browser and phone at the customer site.

Hosted contact center offerings must be able to intelligently route, queue, report and provide workflow for inbound and outbound customer inquiries, across all communication media, including phone, web, fax, email, chat and collaboration. Companies should also consider future needs beyond core contact center functionality, such as customer relationship management (CRM) applications, customer service suites, call tracking, field service and sales force automation (SFA).

7.2.1 A Two-Step Selection Process

Prospects for hosted contact center solutions must evaluate both the underlying technology and the service capabilities of the provider/delivery company with whom they will be dealing directly. As this is a developing and expanding market, there are many variations among the offerings available from service providers. Some of the service delivery companies openly disclose whose technology they use for their hosted contact center offering and others do not. In either case, it's essential for end users to evaluate the capabilities of the underlying switch, in addition to assessing the service that they expect to receive from the service provider.

Hosted offerings are new to service providers and they are just beginning to learn how to sell, provision, manage and support these advanced contact center services – skills very different from selling carrier services. Early adopters have been working through these challenges with their service providers. NSPs are realizing that they need to employ a staff that is knowledgeable about contact center operations in order to assist end user organizations in setting up optimal contact center operations. NSPs are also realizing that they must invest in educating their staff about the features and capabilities of their new services.

7.2.2 Technology Criteria

The breadth and depth of the hosted contact center offerings vary greatly and are still maturing. Hosted contact center solutions should include core functionality for multi-

media routing and queuing, IVR, and CTI, as well as other non-core applications such as call recording, quality management, workforce management and customer service suites. End users must prioritize their own technical, functional, pricing, installation and support requirements and then find vendors that address their needs. End users replacing a premise-based switch may not yet find everything they had in the past, but Greenfield sites are likely to be very pleased with the advanced capabilities that are standard in most hosted contact center offerings. If a feature or depth of functionality is not yet available from a particular hosted contact center provider, ask to see the product roadmap to find out if and when the missing capability is going to be added. The hosted contact center vendors are intent on providing solutions that are as feature-rich and competitive as premise-based offerings, if not more so. Features being offered through partnerships today are being considered for inclusion in the near future. End users should make their requirements known to hosted contact center vendors, who are hungry for new business.

Figure 2 is a checklist of primary contact center functionality required to operate a contact center efficiently. Use this list as a guide for comparing the various product offerings.

Figure 2: Checklist for Primary Contact Center Functionality

Feature	Core offering	Offered through partnership	Future product release
TDM			
IP			
Hybrid TDM and IP environments			
TDM and IP switching for the same tenant			
TDM and IP switching for the same tenant			
Voicemail for each agent			
CTI			
Universal queue			
Network management			
Dialer			
IVR			
Surveying			
Speech recognition			

Feature	Core offering	Offered through partnership	Future product release
Logging/recording			
Quality management			
Speech analytics			
Workforce management			
Email response management			
Chat			
Fax			
Web-based collaboration			
Web self-service			
Agent scripting software			
CRM suite			
Telemarketing/telesales Application			
Performance management			
Reporting			

7.2.3 Globalization and Localization

Hosted contact center offerings should include multi-language capabilities to account for localized language differences (e.g., Argentine and Mexican Spanish). Hosted solutions should also enable users to operate in disparate locations with varying time zones, incorporating a mechanism to allow agents and supervisors to run reports and conduct all other contact center activities in the relevant zone.

7.2.4 Architecture

Hosted contact center offerings should be based on multi-tenant architecture. Prospects should be mindful of any limitations on the number of independent tenants that can be supported on a single switch, as well as vendor capacity per tenant (number of simultaneous users). The latter issue is of particular concern for companies that are considering adding capacity to their existing contact center operations.

Additionally, hosted offerings should utilize open standards to ensure systems interoperability with a broad range of operating environments, including Windows, Linux and Unix. Prospects should identify what resources, if any, are required to complete systems or software integrations and calculate the associated costs.

Prospects should address and compare the core architectural factors, addressed in Figure 3: Hosted Contact Center Architectural/Operational Requirements.

Figure 3: Hosted Contact Center Architectural/Operational Requirements

Feature/Capability
Does the solution support TDP and IP Transactions?
Does the solution support multiple locations?
Does the solution support multiple tenants (users)?
Is there a physical separation between tenants?
Is there a software separation between tenants?
What hardware must be installed at the end user site?
Is the solution network-based?
Can the system and application be upgraded without disrupting service to other tenants?
Can the solution be integrated with a customer’s existing telephony infrastructure?
If yes, how much time, money and resources will be required?
What is the system’s capacity – how many agents can simultaneously use the solution?
What is the vendor’s capacity per tenant (how many simultaneous users)?
Is there a limit on the number of independent tenants per switch? If so, what is it?
What server hardware platform does the switch run on?
What clients (Windows, Apple, Linux) does the application support?
What databases does the application support?
Can the application support multiple databases?

7.2.5 Security

Hosted vendors must protect their customers from internal and external security breaches and attacks. Additionally, supporting multiple customers on shared systems requires that each tenant’s data and business processes be kept secure. A multi-tenant system must provide for separation among clients, such that each customer can

operate in a segregated environment while still leveraging shared licenses and hardware.

7.2.6 System Implementation and Maintenance

Ease of implementation and ongoing maintenance are essential for hosted solutions. Prospects should carefully evaluate the provisioning capabilities of their service provider. Offerings that can be implemented using menu-driven interfaces without the need for system integrators or professional services have shorter implementations and lower expenses.

It is essential that end users evaluate the ongoing support they expect to receive after the system is implemented. Issues include whether software upgrades are included in the maintenance agreement, how custom change requests are addressed and how often features are added to the system. Prospective hosted contact center customers should inquire about downtime for all upgrades and systems changes.

Prospective system users must also find out if subscribers are allowed to self-administer changes to the system or if their NSP is going to be responsible for these changes. Many hosted contact center systems include this capability, but NSPs do not enable it because making system changes is a valuable revenue stream for them. Regardless of whether users want to make changes themselves or have the NSP do so for them, they must select a hosted contact center offering that is flexible and allows for timely modifications.

7.2.7 System Backup

As contact centers are considered mission critical in most organizations, system backup is a serious issue. Hosted offerings must be fully redundant and subscribers should seek service level agreements that guarantee uptime. Providers must ensure that there is no single point of failure and must offer “hot-backup” technology or mirrored processes that run in parallel. This guarantees non-stop service even in the event of server failure. Moreover, the system back-up should be situated in a geographically separate location.

7.2.8 Reporting

Reporting is critical for contact centers, which must measure every aspect of their systems and agent performance. Prospects for hosted contact center solutions should seek solutions that offer maximum reporting flexibility. Users should be able to pull standard reports and customize them with a web browser. Subscribers should identify how often reports are provided and the manner in which reports from multiple tenants are maintained.

7.2.9 Pricing

Price is a very important decision criterion for many companies, however, it should be considered relative to the other factors, such as total cost of ownership. There are many cost factors to consider including: cost per seat, whether licenses need to be purchased for each medium or if they are channel-independent, implementation costs, upgrade and termination fees and the cost of adding new seats and sites.

7.2.10 Experience and References

The growth of the hosted contact center market has ushered in numerous vendors and providers from different backgrounds with varying levels of experience. A hosted contact center vendor or provider should be able to demonstrate successful project engagements with full product suites in a multi-site, multi-tenant environment. Additionally, vendor partnerships should be verified.

8. Vendor Analysis

The following analysis compares the offerings of the hosted contact center technology vendors. These tables provide insight into the offerings of the hosted contact center vendors and are intended as guidance for prospects making a selection.

9. Scope of Offerings

Figure 4: Hosted Contact Center Vendor Functional Analysis provides a comparison of the current product releases from seven hosted contact center infrastructure vendors. The data for the competitive analysis were gathered between November 2004 and January 2005. The names of the offerings are:

1. Avaya – Service Provider Delivered Solutions
2. Cincom - Synchrony On-Demand
3. Cisco – Cisco IPCC Hosted Edition
4. Contactual – On Demand Contact Center
5. CosmoCom – CosmoCall Universe
6. Telephony@Work - CallCenter@nywhere
7. UCN – in Contact

Figure 4: Hosted Contact Center Vendor Functional Analysis

Scope of offering	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
ACD	Yes	Yes	Yes	Yes	Yes	Yes	Yes
- TDM-based	Yes	Yes	Yes. Integration to TDM ACDs is provided via premise-based peripheral gateways (co-located with the ACDs). (The gateway is Cisco software running on a Windows-based server.)	Yes	Yes, with any standard gateway	Yes	Yes
- IP-based	Yes	No	Yes	Yes	Yes, H.323 or SIP	Yes, supports IP gateways from Cisco, Quintum, Audiocodes and others	No
CTI	Yes ¹	Yes	Yes	Yes	Yes	Yes	Yes

Scope of offering	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
Universal Queue	Yes, through Contact Center Elite ²	Yes	Yes	Yes	Yes	Yes	Yes
Network Management	Yes, through integration with HP Open View for service providers	No	Yes	Yes	Yes	Yes	No. Not Required.
Dialer	No	No. Coming in December 2005.	Yes	No. Due in April 2005.	Yes	Yes	Yes
IVR	Yes	No. Available through partnerships.	Yes	Yes	Yes	Yes	Yes

Scope of offering	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
Speech Recognition	Not standard. Can be added.	No. Available through partnerships.	No. Available through partnerships (e.g. Scansoft, Nuance).	No. Available through partnership with Angel.com.	No. Available through partners.	No. Available through third-party partnerships.	No
Logging/ Recording	Yes. Available through partnership with Witness.	No. Coming in September 2005.	No. Available through partnerships (e.g. Witness, NICE).	Yes	Yes	Yes	Yes
Quality Management	No	No. Coming in September 2005.	No. Available through partnerships (e.g. Witness, NICE).	No	Yes	No. Due in Q1 2005.	No ³
ERMS⁴	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chat	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Scope of offering	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
Web self-service (WSS)	No	Yes	No	Basic FAQ. Will partner for WSS.	Integration	Yes	No
Agent scripting software	Yes in Interaction Center	Yes	No	No. Scripting engine due in April 2005.	Integration	Yes	No
Customer Service and Support (CSS) suite	Yes. Provided through relationship with Onyx.	Yes	No	No. Includes basic call tracking for opening and tracking cases.	Yes. Includes account, contact, case and interaction history.	No. Includes interaction system for customer history. CSS provided through third parties.	No. Partners with RightNow Technologies
Telemarketing /Telesales	No	No. Coming in December 2005.	No	No. Through partner. [??]	Yes	Yes	No. Partners with Inside sales.com

Scope of offering	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@Work	UCN
Workforce management	No	No	No. Available through partnerships (e.g. Blue Pumpkin).	No	No. Available through partnership with ISC (Irene) and Blue Pumpkin.	No. Has pre-built integrations with Blue Pumpkin and Left Bank.	No
Reporting	Yes, as part of CMS and Operational Analyst.	Yes	Yes	Yes	Yes	Yes	Yes
Contact center performance management	No	No	No	No	No	No	No

¹ Provided through Interaction Center and Avaya Communications Manager.

² Contact Center Elite is the brand name for Avaya's ACD product that is on the Avaya Communications Manager.

³ inContact supports on-demand, percentage based recording and monitoring. It does not include QM evaluation forms.

⁴ Email Response Management System.

Avaya, Cisco, Contactual, CosmoCom and Telephony@Work offer TDM and IP-based solutions. Cincom and UCN currently offer a TDM-based service and say that they will be coming out with an IP-based offering later in 2005. All of the vendors offer routing and queuing capabilities, IVR, CTI, email response management and universal queuing. The actual capabilities for each of these functional areas differs substantially among the vendors and prospects should assess them carefully to ensure that their specific requirements will be addressed.

Although hosted contact center vendors are continuing to broaden their functional capabilities, there is not yet a common set of capabilities included in all of the solutions, but the market is moving in this direction. For example, most of the vendors offer outbound dialing capabilities, except Avaya, Cincom and Contactual. (Cincom and Contactual expect to deliver this feature during 2005).

Hosted contact center vendors offer a number of functional capabilities through partnerships. When making a selection, it's important to make sure that the vendor has experience with the integration, as many of these partnerships have not yet been tested.

10. Architecture

Figure 5: Architectural Comparison

Technology	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
Software/ Product	Solution comprises: Avaya Communications Manager, Avaya Interaction Center and Avaya Operational Analyst (Reporting tool for web interface into the contact center. Web version of CMS), CMS, Avaya IVR (could include speech).	Application was developed in-house in 1997. J2EE architecture. Written in Java. Leverages Web Services.	Cisco IPCC Hosted Edition was developed in house and runs on Windows server platform.	Application was developed in-house, using C and C++. Solution is multi-media switch with call center functionality. IP and TDM.	CosmoCall Universe was developed in-house using .NET architecture and coded in C++. MS Exchange is embedded in the application. It runs on MS Windows 2003 Server.	Application was developed in-house, using C, C++ and J2EE. Includes two external components: the IP stack (by RAD Vision), and screen monitoring.	Application was developed in-house, using Delphi with MS SQL database. Solution is utilized in multi-channel, multi-site contact centers.

Technology	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
Hardware platform/ server support	Runs on IBM Blades and supports Linux and Windows	Intel/ Windows 2000 and 2003 servers and Sun Solaris.	Standard Intel-based servers from HP, IBM, and Cisco Media Convergence Servers	Linux	Any Windows 2003 Server; no special hardware of any kind	Runs on UNIX (Solaris and Tru64 Alphaserver), Intel (Windows or UNIX) and Linux	Windows
What database do you support?	No external database besides those that are standard with product (no need to purchase a database)	Oracle 9i or MS SQL Server 2000.	MS SQL with an ODBC interface	MySQL or Oracle	MS SQL	Oracle, DB2, or SQL	MS SQL, Oracle, Access, and others

Technology	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@Work	UCN
<p>Is any hardware required at the customer site?</p>	<p>Yes. Phone, PC and an application level gateway that supports network address translation traversal.</p>	<p>Yes. Phone and PC</p>	<p>Yes. IP phones and PCs.</p>	<p>Yes. A phone for PSTN and a browser/headset for VoIP. Requires a gateway that supports SIP.</p>	<p>Yes. PC and headset. Or, IP or circuit phone.</p>	<p>Yes. PC with a browser and an IP or circuit phone.</p>	<p>Yes. TDM or DID phone and a Windows PC. When a database connection is involved, a Windows PC running the UCN db-Connector gateway software is required.</p>

The technical environments and applications for the hosted contact center vendors are varied. Some of the vendors have designed and built their solutions from the ground up for the hosted market, others have modified existing solutions and one has tied together existing applications under a new product name. The majority of the vendors in this market run on Windows-based servers, although Contactual runs on Linux and Telephony@Work supports a variety of servers. Hosted contact center customers generally need a PC with a browser and a telephone for each system user.

11. Go-to-Market Strategy

Figure 6: Comparison of Vendor Go-To-Market Strategies

Target Market	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony @ Work	UCN
Are you going to host?	No. Avaya is targeting service providers.	North America – yes. Looking to host in Western Europe. Brazil – Yes.	No	Yes	No. CosmoCom is targeting service providers.	No	Yes
- NSPs/ Telecoms	Yes	No	Yes	Yes	Yes	Yes	No
- Outsourcers	Yes	Yes	Yes	Yes	Yes	Yes	Yes
- System integrators	Yes	Yes	Yes	Yes	Yes	Yes	Yes
- End users	No	Yes	Yes	Yes	Yes	Yes	Yes

Avaya, Cisco, CosmoCom and Telephony@Work are targeting the NSP market. Cincom, Contactual and UCN are happy to sell to NSPs and are also hosting their respective solutions for end users. All the vendors are targeting outsourcers, system integrators and NSPs.

12. Operational

Figure 7: Vendor Operational Comparison

Functionality	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@Work	UCN
Do you use a telephone interface for PSTN connection (i.e., do you support pure circuit switch connectivity for PSTN connection)?	Yes, for VoIP and for traditional TDM connection	Yes	Yes	No, for the hosting company. But, yes, the agent does need a telephone interface.	No, not required	Yes	Yes
If yes, which ones do you support?	E1, T1, BR1 or analog	T1, BR1, PRI, analog and PSTN.	E1, T1, BR1, PRI, or analog	Uses Contactual's or Level 3's	N/A	E1, T1, PRI, analog	E1, T1 or analog
Do you support standard VoIP gateways for PSTN connection?	Yes	No	Yes	Yes	Yes	Yes	No

Functionality	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
If yes, which ones do you support?	Supports Avaya VoIP gateway and interoperates with service provider gateways	N/A	Cisco	Cisco gateway	All standard H.323 and SIP gateways	Audio-codes, Cisco, Quintum and Nortel	Use own IP network
Does the solution support multiple tenants?	Are not focusing on multiple tenants on the same server. Focus placed on supporting multiple processes on the same server (for each tenant). Service providers will need a different blade processor per tenant.	Yes	Yes	Yes	Yes	Yes	Yes

Functionality	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
If so, is there a limit on the number of tenants on one switch/box?	Yes, one per blade	No	No	No	No	No	No
Is it a physical or software separation for each tenant?	Physical and software separation	Software separation	Software separation	No. One instance of software running for everyone on multiple Linux boxes.	Software separation	Software separation. Can also run different databases.	Software separation
If physical, is each tenant bound to a specific physical server?	Yes	N/A	N/A	N/A	N/A	N/A	N/A
What is your capacity per tenant?		No limits.	One to thousands of agents.	No limits. Just add additional Linux box.		50,000 across all tenant locations	No limits. Only limitation is size of platform.

Functionality	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
- Per seat?	Up to 240 contact center seats per blade	N/A	N/A	A \$2500 Linux box supports 225 agents	10,000	50,000	Same as above
- Per site/ office/ branch?	Can have multiple sites on same server blade	N/A	N/A	No	10,000	50,000	Same as above
Can a tenant produce customized reports on demand?	Yes	Yes	Yes	Yes. 30 canned reports.	Yes	Yes	No. But can produce standard reports.
If yes, how?	Will have supervisor access for reports.	Browser-based reporting. Use Cognos' reporting and OLAP	Browser-based reporting interface provides tenant/subscriber control	N/A	Via web-browser	Via a browser	N/A
Can a tenant manage their own routing and queuing from their site?	Yes	Yes	Yes	Yes, via a web browser	Yes	Yes	Yes

Functionality	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
If yes, how?	Will use supervisor client via a browser	Via a browser	Browser-based Internet Script Editor provides tenant/subscriber control	Via web browser	Via web browser	Via a browser	Through inControl, an application builder

All products except those from Avaya are based on a multi-tenant architecture with no limits on the number of tenants per switch (although the limits have not yet been tested in a real world setting). All of these technology offerings allow customers to manage their own routing and queuing and produce customized or standard reports as needed. (Keep in mind, though, that some NSPs may not give users these abilities.)

13. Pricing

Figure 8: Hosted Contact Center Vendor Pricing Comparison

Pricing	Avaya	Cincom	Cisco	Contactual	CosmoCom	Telephony@ Work	UCN
What is your pricing?	Usage based. Pricing will vary based on volume, functionality and country. Specifics not available.	Per seat pricing. Pricing below is for a 100-seat environment. (Prices include basic supervisory tools). CRM Desktop only - \$60/seat/ Month CRM Desktop + Email/Ch-at/Fax - \$90/seat/month CRM Desktop + ACD - \$120/seat/month CRM Desktop + all channels - \$150 seat/ month Advanced Analytics Administrative Users - \$500/seat/else) Discounts available for term contracts.	IP Contact Center- Hosted Edition is priced at \$1000 - \$2000/ agent. (Price for hosting company.)	Starts at under \$150 to \$225/ seat/ month. Price dependent upon volume and functionality.	Pricing is available on a perpetual basis, \$1500 to \$3000/ agent or on a subscription/ utility basis, \$75 to 150/agent/ month	Have three pricing models: Simultaneous interactions, simultaneous logins and named users. \$2,500 to \$5,000 for simultaneous interactions.	\$3,900 one-time set up fee, plus \$75-\$125/ seat/ port per month

Note: The pricing in the table is incomplete. Most of the vendors also have start-up, training and other related charges.

Licensing models for the six vendors varies significantly. A number of the vendors offer pricing schemes based on usage, while others incorporate the traditional per seat/per agent model on a perpetual basis. Still others offer concurrent licenses that are media-independent.

14. Bottom Line

Hosted contact centers offerings are not new; what is new is that many of these solutions are becoming as feature-rich as products from the leading premise-based contact center infrastructure providers. As of Q4 2004, hosted solutions are being offered by leading contact center infrastructure providers in addition to less well-known "start-ups." The hosted contact center market is past its infancy and is starting to mature. Prospects of all sizes in countries around the world have high-end, viable alternatives to installing a premise-based contact center offering.

Not all hosted contact center solutions are alike, nor is the support being provided by either the NSPs or outsourcers. Yes, one benefit of using a hosted contact center offering is the ease of starting and stopping the service, but the reality is that end users are not going to want to change their service providers frequently and therefore must undertake a selection process that is as thorough as if they were going to install the product on site. End users looking for a hosted contact center offering must choose a network service provider from which to provision the offering and receive ongoing support. While it complicates the business model, end users also need to pay attention to the underlying technology (contact center infrastructure) to be sure that they can get all of the capabilities that they need today and for the next couple of years.