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CAT 2007: Simplifying Search, Service Delivery and Customer Care

A Conversational Access Technologies Advisory
January 2007

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In 2007, IT spending will grow very modestly. Yet spending on Conversational Access Technologies (CAT) – automated speech, real-time communications and service-oriented architectures – will continue to follow a growth rate in the high 'teens or low twenties. You may think that the need to accommodate photos, music and video would crowd out automated speech as an important modality, but the opposite is true, as discussed in this advisory.

At this time last year, Opus Research laid out a forecast for growth in enterprise spending on CAT-oriented hardware, software and services predicated on "simplicity and affordability." We saw pre-packaged applications being superseded by a "take 'n bake" approach to building well-understood applications from readily available piece parts.

In 2006, we documented three major, irreversible trends in communications and computing infrastructures shaping IT spending patterns: migration of service platforms from proprietary systems to general purpose "servers," the proliferation of Web-based standards and, finally, the expansion of the broadband Internet, especially to reach mobile (wireless) subscribers.

We see these trends only intensifying in 2007, sweeping speech-enabled, conversational access into highly competitive worlds outside the comfortable silos of IVR replacement in contact centers and network-based call steering.

To be sure, this will not be without risk. Microsoft's mavens in unified communications used to tout the fact that it would "make speech mainstream." In a world where significant investment in imagination, computing resources and bandwidth is directed toward mashups, unified communications, Web 2.0 and open telephony, it will suffice just to "make speech matter."

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Y2K Plus Seven Equals Big Opportunity

If you're in the enterprise communications infrastructure business, this is the year that the vehicles for IP migration go into overdrive. A long-anticipated spike in hardware replacement is about to take place as an echo of the not-too-distant past when enterprises rushed to replace mainframe computers, database servers and even voice response units that were unable to comprehend the meaning of "2000" when it appeared in the "Date" field of an electronic form. In the voice-processing world, it gave systems makers the opportunity to refresh their product lines and force an upgrade on loyal clients.

The expected service life of such systems, and their attendant depreciation schedules, is seven years. The battle is on among enterprise computer and communications infrastructure providers to win their share of an anticipated windfall. Big Software has replaced Big Iron (that's really old news). Indeed, Nuance's impressive revenue growth was

spurred not just by acquisitions, but by "organic" revenue growth in the 20% range at a time when the overall growth in IT spending is roughly 5%.

Automated Speech in the SOA

Entering 2007, enterprise decision-makers confront some hard choices. They have depreciated their existing systems, but the path forward is not as clear as it was when they were merely "upgrading" to a Y2K compliant solutions from an existing vendor. Software does what hardware did. All manner of applications have been wrapped in a services-oriented candy shell with well-understood SOAP-flavored APIs (applications programming interfaces). As a result, new architectures have evolved, silos collapsed and layers have stratified.

Data is effectively separated from applications and, therefore, available for sharing. Presentation resources and modalities are totally separated from the underlying applications and data. It is this separation that really put speech in its place. It's what makes it possible for people to retrieve e-mail from their wireless handsets, or for bank customers to retrieve data or perform transactions the same way whether they are standing at a branch, typing on their PC, using an ATM or on the phone talking to a voice response unit or chatting with a live agent

The self-styled speech processing community (we never liked the idea of calling it an "industry") had always treated speech as an "application." To the firms that invested heavily in speech processing technologies, speech-enablement became more than a means to an end – providing an alternative to screen-based or keypad-based access when appropriate – it was the end itself.

Paying Professionals To Ease the Transition

In 2006, with focus shifting to "user experience" and "the business value of the SOA," enlightened members of the speech processing community have come to recognize that their success is intimately linked not-so-much to successful speech recognition, but to a broader context that includes improving customer care and aiding enterprises in achieving their business goals. The dream of SOA (service- oriented architecture) is coming true.

The transition to SOA creates a major role for purveyors of professional services that assist companies with the

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specification, coding and the inevitable migration management from present solutions to more open, higher-speed and IP-conformant platforms. This is good news for IBM Global Services (GS) and Business Consulting Services (BCS), as well as the dedicated individuals in the WebSphere marketing group, like vice president Sandy Carter who has been circling the globe to conduct educational sessions for both IT and line-of-business executives.

Supplying the Best Development Tools for the Job

Both professionals and internal IT staff are availing themselves of some of the most sophisticated resources ever available to support rapid development of Web-aware, speech-enabled services. 2006 witnessed a reduction in ranks among independent providers of application development tools as Cisco Systems acquired Audium. It signaled the need for infrastructure providers to beef up their support options. As noted below, both Genesys Labs and Avaya have responded dramatically.

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Developers tend to use the tools with which they are most familiar. As the term "application" fans out to include much more than scripting IVR sessions, they see promise in the "studios" that are provided by the major purveyors of middleware – think WebSphere Studio or Microsoft's Visual Studio. With the introduction of the Vista operating system, and the next generation of the Exchange Server (Exchange 2007), application developers will find that Microsoft has formalized its role as supplier of development tools for speech-enabled, unified communications in a very big way.

Still, Avaya, with Dialogue Designer, earns high marks from those who want a simple, expedient way to build interactive voice response applications. And Nortel has maintained a loyal following for its long-standing community of application designers, dating back to the PeriProducer days.

Independent providers of development tools have been winnowed down to the UK-based Vicorp, which is gaining traction for a suite of solutions under the xMP umbrella. Vicorp supplies resources that speed the development time for speech self-service applications in conjunction with a number of platform and middleware providers, including Nortel, Genesys Labs, BEA and others.

The Outsource-to-Own Alternative

A lot of companies are caught in the headlights of SOA. They are well aware of the financial benefits of reusing Web-based components. They may also be well-versed regarding implementation issues surrounding SOA governance and milestones. But problems arise when real-world issues surrounding organization, division of labor, training and support enter the picture.

Managers have the responsibility of keeping their personnel as productive as possible while introducing multiple new technologies. In many cases, the simplest solution is to turn to third-party business process outsourcers and managed service providers to steer them through complex changes in system architecture and application environments.

Speech automation follows the BPO pattern, which is good news to hosted speech and managed services providers like First Data, West and Convergys. Other direct beneficiaries are the business communications subsidiaries of incumbent telecommunications providers. In North America, Qwest, Verizon Business and Rogers (formerly AT&T Canada) lead the way. Around the world, France Telecom (Orange Business Systems) and Telstra have very progressive offers of network-based services for multimodal self-service in contact centers and throughout the enterprise.

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Speed Speeds the Way

The growth of the broadband Internet is accelerating. People like me, who live in the communications-addled United States, don't appreciate how far we've fallen behind much of the world in terms of broadband services. Dozens of countries in Western Europe and the Pacific Rim move voice, video, images and data at much faster, less asynchronous (meaning uploads and downloads are uniform) speeds, even over wireless networks. With fewer choke-points for end-to-end and peer-to-peer communications, creative minds have been set free to invent more attractive applications and better user experiences.

Make Way for Mashups

In 2007, Opus Research expects to see much more from the community of service providers that make their wares more affordable by offering them "on demand." The trick will be to prove utility as well as novelty. That makes the time ripe for voice ASPs of all stripes to start thinking in terms of mashups. [As an introduction, or refresher, note that a

mashup is a Web service or application that melds information or resources from more than one source but presents it as an integrated user experience.]

Google Maps is a Web service that was among one of the first to get the mashup treatment as hackers (or "mashers"?) overlaid known locations of microbreweries, million dollar houses or sex offenders with aerial photos or street maps a public service. Static maps were easy prey. Other popular mashups add pricing information and product descriptions from the likes of eBay and Amazon; presence information and screennames from AOL Instant Messenger, Windows Live and FaceBook; and general search and mapping utilities from Yahoo!, Microsoft and others. With utility proven, business models follow.

Support Those Who Support You

The most successful market participants are those that create revenue opportunities for their technology and marketing partners. Thus, a good deal of credit goes to efforts like Avaya's Developer Network (DevNet), which blossomed into a global network of over 1,200 system integrators, ISVs and application developers. Genesys Labs deserves kudos as well for retooling its collection of software development kits and "connectors" into a single "Universal SDK" closely linked to a Web-based portal called the Developer Zone.

Collectively, the new tools and modalities give rise to better user experiences, not just for online and phone-based customers but also for application developers and interactive service providers. If anything the Conversational Access Technologies community is paying too short a shrift to free-wheeling world of Ajax (a dynamic Web services generator and acronym for "Asynchronous Java-script and XML") as well as Ruby on Rails, a combo programming language (Ruby) and a dynamic applications framework.

Last year, the Eclipse framework was the great equalizer among application development frameworks and environments. Part of making speech matter is to make sure that there are lots of examples of reusable code and programming elements that can be brought into the development layer. Both sides of the Nuance house have long offered reusable dialogue modules. Same can be said for the Microsoft's development resources for speech and IBM's contribution of the Reusable Dialogue Component (RDC)

initiatives that keeps the library of application go-fasters growing.

Linking Customer Care with Conversational Networking

One of the business models inevitably circles around traditional marketing and customer retention strategies for retailers, entertainment companies, restaurants and, most importantly, mobile service providers. Call it "conversational networking."

Keeping the conversation going between and among customers by whatever means is available. Step one is ensuring that interesting, consistent and contextual information is made available in a way that is truly useful to a client, customer, employee or prospect.

We've seen the proofpoints from Nuance (Nuance Mobile), Verizon Wireless (speech-enabled Get It Now), Ydilo (Vodafone Interactive Care) and a few other service providers. Service providers like France Telecom's Orange Business Services and Verizon Business are poised to offer conversational networking but place it under the multimodal contact center or unified communications umbrella. Software infrastructure providers – including IBM (WebSphere Anywhere), Microsoft (Office Communicator Suite), Avaya (IP Contact Center) and Aspect Software (endorsing Asterisk) – each nudge the prevailing technologies in the direction of improved conversations with customers.

Tastes, preferences and usage patterns for new media are shaped by a combination of what services are available and how the self-styled "early adopters" choose to use them. In the interest of preserving privacy and control, many of the newest of new services have been "by invitation only." It is counterintuitive, but the rewards gleaned from commoditization of hardware and software, migration to open standards and well-understood APIs is the creation of thousands (ultimately millions) of closed, self-identifying, exclusive social networks "trust circles" and "buddy lists."

Speech Meets its Second Life

Contact center operators have something to learn here. What better customer retention device could there be than an opt-in group of people who have "friended" one another while co-browsing an e-commerce site. Next comes the addition of presence-awareness and global positioning systems. Think of MySpace (with its mood indicators and photos) moving to

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mobile devices and you'll see that real-time communications has taken on increasing importance as part of the mashup milieu.

You may think that the need to accommodate photos, music and video would crowd out automated speech as an important modality, but the opposite is true. The ability to extend the reach of real-time services across multiple networks to a multiplicity of devices is important, generating the need for "skinny," ubiquitous clients. Spoken words over a wireless handset, traditional telephone or VoIP softphone could easily be the ultimate skinny client. Speech will prove superior for authenticating users, entering commands, dictating messages and querying databases. It matters because it is unique to each person, highly portable and virtually ubiquitous.