



The Ins and Outs of Outbound IVR

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Abstract: Datamonitor predicts the market for hosted Outbound Interactive Voice Response (IVR) services in North America alone will more than double from an estimated \$213 million in 2008 to \$524 million by 2013. Outbound IVR offers companies the ability to provide proactive customer service, deliver important notifications, expedite collections and more. In order to put the advantages of Outbound IVR to work for you, it is important to understand the intricacies of successful outbound calling, how it differs from your Inbound IVR solutions, and the importance of delivering a cohesive customer experience. This whitepaper will explore the business case for Outbound IVR and the critical success factors you need to know about before getting started.

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1 Outbound IVR – the Next Big Thing

As companies look to the next big thing that will differentiate their businesses and lower costs, they do so with the realization that customer expectations are at an all-time high. Consumers want real-time information, faster service, greater convenience and choice. The ability to proactively serve their needs, provide personalized alerts, and quickly communicate with mass audiences are some of the capabilities that make Outbound IVR a valuable component in any organization's customer interaction strategy.

Outbound IVR is a technology for delivering automated, phone-based outbound communications. Calls can range from personalized, event-triggered notifications and two-way interactions to broadcast messages to hundreds or even thousands of customers.

Outbound IVR can utilize static, recorded messages or dynamic, speech-enabled dialogs with the ability to transfer callers to an agent. Application examples include:

- New customer welcome messages
- Product availability updates
- Personalized offers and promotions
- Travel-related notifications
- Problem reporting
- Problem resolution updates
- Change notifications (account status, billing, rates)
- Interview pre-screening
- Fraud prevention
- Shipping notifications
- Opt-in, subscriber-based services
- Subscription renewals
- Appointment reminders
- Invitations with RSVP capabilities
- Transaction confirmations
- Past-due bill reminders with payment processing options
- Customer surveys
- Community meeting notices
- High-volume, time-critical emergency notifications

Outbound IVR offers advantages for businesses of all sizes and across verticals, including financial services, healthcare, government, utilities and education.

2 The Business Case for Outbound IVR

Offering new and alternative interaction options can heighten the customer experience and give companies a competitive advantage. As part of a holistic customer interaction strategy, Outbound IVR is a mode of interaction that makes it easier for people to do business with your company. When used properly, it can increase customer loyalty and satisfaction.

For customer-focused companies the biggest benefit of Outbound IVR is the ability to provide proactive, highly personalized customer service. It enables enterprises to anticipate customer needs and take action in order to diffuse potentially frustrating situations, streamline processes and improve agent utilization.

Outbound IVR, which is often hosted, is not only an affordable communication channel, but also one that can result in measurable cost savings. Following are some examples of the efficiencies derived from outbound:

- Automate reminder calls, freeing office personnel and call center agents to work on higher value tasks
- Deliver calls outside of office hours, when customers may be easier to reach
- Reduce appointment no-shows
- Enable immediate and convenient action on notifications – “We see you missed your flight to Boston this morning. Would you like to book a new flight now?”
- Preempt inbound call volume in the contact center by reaching out to customers before they call you
- Efficiently address an increasing volume of missed payments without tying up valuable agent resources with collection calls
- Reach a large number of customers in a short time without having to overstaff agents or invest in and maintain additional hardware, software or phone lines
- Connect with today’s hard-to-reach customer and authenticate their identity before involving an agent
- Maximize IVR port usage by using non-busy hours for proactive customer service
- Reduce telephony charges with IP telephony and low-cost SIP bridging
- Reduce the expense of paper-based reminders while minimizing the chance of communications being unintentionally delivered to the wrong person, confirming receipt of important messages and being kind to the environment

Outbound IVR vs. Predictive Dialers

Today's Outbound IVR solutions provide significant advantage over cumbersome predictive dialers and auto dialers. Dialer systems are typically located on-site, require staff for maintenance, and are expensive to deploy in a fault-resilient manner that ensures business continuity should one site fail. For example, in a weather-related emergency, predictive dialers generally cannot be accessed from a remote location like a hosted Outbound IVR solution. Even worse, administrators may be unable to send emergency notifications at all if their area is without power.

The ability to deliver a huge volume of calls quickly is also an issue with predictive dialer systems. Think about delivering a one-minute voice message to 1,000 people. A typical predictive dialer with two dedicated phone lines would take hours to deliver the message to everyone, whereas a hosted Outbound IVR system could do it in minutes. A company could deploy more dialer ports on site to accommodate these bursts in traffic, but it would be an expensive undertaking.

Of course, the main idea behind a dialer system is to screen no-answers, busy signals and disconnects so that only live speakers are presented to agents. Outbound IVR goes beyond that. Applications can leverage speech recognition (ASR) and dual tone multi frequency (DTMF) to verify data and enable interactive self-service – only routing callers to an agent when assistance is needed. Even in a situation where the goal is to get the called party to a live agent, the IVR greeting and upfront call treatment can be used to avoid dead air issues that often result in the caller hanging up.

The Hosting Advantage

The majority of Outbound IVR is hosted – a trend that analysts predict to continue. Hosting gives companies the ability to get started quickly and without upfront capital expenses tied to deploying and maintaining the infrastructure needed to deliver interactive outbound calls. This is even more relevant for companies and service providers who need to deliver important and/or time-sensitive calls to large audiences. A hosting provider can provide the capacity required to handle large bursts in call volume.

A distributed hosting solution also offers a level of reliability and geographic diversity that is difficult and expensive to achieve in house. Again, this is of critical importance to government agencies, schools, utilities and other organizations that need high availability in order to quickly deliver essential messages to thousands of people.

Hosted Outbound IVR, and hosted IVR in general, also provides low-cost access to the latest standards and technologies, such as CCXML, speech recognition and speech synthesis, as well as to next generation SIP-based architectures that ease integration and lower the cost of transferring calls with direct IP-to-IP connectivity.

The Outbound IVR Value Add

In addition to customer service-related applications, Outbound IVR enables consumers to sign up to receive highly relevant information and interactions based on profile information and parameters they can control. This could be anything from requesting a message when an out-of-stock product is available to scheduling a reminder when tickets to see their favorite artist are about to go on sale. In addition, companies can use outbound to deliver targeted promotions, up-sell offers and renewal notices.

3 Success Factors

In the beginning there was Inbound IVR. It was good, but often the source of customer frustration. Then came advancements in speech, open standards and user interface best practices that provided the foundation to make Inbound IVR everything it was intended to be. Companies now face a similar learning curve with Outbound IVR. The value is there, although if not properly implemented, it can be the source of intense customer frustration.

Companies must take great care to deliver Outbound IVR in a manner that customers find of value rather than a nuisance. That means providing an intuitive user interface, a well-tuned application, useful information and an overall pleasant experience. However, there is much more that goes into Outbound IVR success. Following are some of the factors that can make or break an Outbound IVR initiative.

Call Progress Analysis

Call Progress Analysis (CPA) is the ability to detect answering machines, fax machines, and other call progress or special information tones such as busy signals, as well as identify when a call is answered by a human. CPA's detection functions are enabled by media processing algorithms that are typically provided by DSP boards or host media processing (HMP) software. The ultimate goal of CPA is to quickly and accurately detect the various tones used during call set-up and the possible responses post-connect in order to present the appropriate call treatment.

The challenge is that there are no standards for answering machines. Outbound IVR applications can encounter personalized outgoing messages, system messages and varied beep tones. On average, about 5% of answering machines are incorrectly identified as human contacts, and roughly 5% of human contacts are assumed to be answering machines and abandoned. Unfortunately, the majority of CPA solutions cannot stay in the call after their initial detection and therefore cannot benefit from advanced error detection techniques and business logic that helps increase success rates and prevent call frustration.

Standards and Ease of Use

An Outbound IVR solution should be based on open industry standards for ease of development, cost effective deployment and portability. While VoiceXML addresses the voice interface of an IVR application, Call Control XML (CCXML) addresses the need for call control functionality such as placing an outbound call or bridging/managing independent calls (or call legs). CCXML also allows business-defined logic to govern message delivery, such as the ability to define actions based on the call being answered by a human vs. a machine. The full value of CPA cannot be realized without a call control language like CCXML.

Open standards also enable straightforward integration with backend systems and existing business logic. VoiceXML and CCXML solutions can even leverage existing enterprise investments in web integration. Any back end server, mainframe, database, or system that has been web or XML-enabled can be rapidly integrated with VoiceXML and CCXML applications. Existing standalone inbound VoiceXML applications can be easily integrated with CCXML and leveraged as a completely standards-based Outbound IVR application.

Additionally, XML standards make it easy for administrators, regardless of their location, to use a web interface to easily set up and schedule an Outbound IVR campaign in order to quickly provide notifications or react to market opportunities.

Relevance

When using Outbound IVR for proactive support, sales and marketing, the key is to leverage business intelligence including customer preferences and behaviors in order to make every outbound call relevant, targeted and valuable. For instance, as a frequent traveler on ABC Airlines, you may be annoyed to receive an offer for an ABC Airlines branded credit card. However, you would likely be delighted to receive a low-fare alert for a frequently traveled route.

Scalability and Reliability

When it's necessary to send a broadcast message to many recipients in a short time period, such as in the case of a service outage, security threat, or school closing, the ability to burst to handle spikes in traffic is critical. In these cases it's equally important to have the reliability of multiple, geographically dispersed data centers to ensure service uptime even if one site becomes unavailable.

Security

As is the case with direct mail, its important to avoid unintentionally violating a customer's privacy. Validating the identity of the called party is often necessary. In some cases, it's enough to insert contact verification steps. The IVR can use a combination of pre-recorded messages and TTS to announce the intended recipient of the call and verify that whomever answered the

phone is in fact that person. In other cases, voice verification solutions may be required to protect sensitive communications common with healthcare and financial companies. Using voice verification, a caller's identity can be authenticated using biometrics and confirmation of notification recorded for compliance.

Regulatory Compliance

Regulatory agencies have cracked down on practices that result in nuisance complaints when callers are greeted with silence and long delays. Rules, such as the Telemarketing Sales Rule (TSR), the Fair Debt Collection Practices Act (FDCPA), and the UK's Persistent Misuse Statement are enforced by the Federal Trade Commission (FTC) and Ofcom.

Regulations in most countries stipulate that a connection to an agent or IVR greeting needs to be made in less than two seconds from the time the call is answered. Outbound IVR with good Call Progress Analysis can meet these industry requirements.

4 Voxeo Best Practices

Voxeo has invested heavily in its Outbound IVR capabilities, which have been battle-tested by enterprise and service provider customers over ten years. Voxeo outbound solutions are currently deployed and actively placing millions of calls per day with greater than 96% call classification accuracy – a success rate that far surpasses the industry average of 80-85%.

CPA detection functions, a core component of Outbound IVR, are typically provided by Digital Signal Processing (DSP) boards or host media processing (HMP) software. However, using DSP alone for call classification is not enough. Instead, Voxeo combines internally developed, highly accurate DSP with surrounding business logic and standards-based call control to enable customizable CPA.

Following are some of the unique capabilities and best practices that differentiate Voxeo Outbound IVR from other providers.

CCXML

Voxeo has provided CCXML hosting since 2001, two times longer than its closest competitor. CCXML is the W3C standard markup language for controlling how phone calls are placed, answered, transferred, conferenced, and more. CCXML works hand-in-hand with VoiceXML to provide a 100% standards and XML based solution for any telephony application. Today, Voxeo has the most deployed CCXML engine in the world, including OEM deployments with other well-known IVR providers. Voxeo's CTO, RJ Auburn, is Editor and Chair of the W3C CCXML standard and working group.

Because VoiceXML is only capable of making an outbound call in the form of a call transfer from an inbound call, Voxeo "wraps" all VoiceXML applications with a stock CCXML script or "wrapper". The wrapper works behind the scenes to give VoiceXML applications the ability to initiate outbound calls. Using this method, the basic parameters that control CPA detection can be sent with the outbound call. However, once a CPA event is identified, the VoiceXML dialog starts and CPA is no longer in the call.

The delivery of a robust Outbound IVR application that takes full advantage of CPA requires call classification and other call control features that are available to application developers using the CCXML 1.0 specification.

Developing the outbound component of an application in CCXML enables complete control of the VoiceXML application at runtime, including the ability to generate XML on the fly or change the call flow. It also allows CPA to remain in the call – listening for further events and weeding out false "human" or "machine" results.

Voxeo offers outstanding out-of-the-box accuracy with the ability to further configure parameters associated with detection and call handling.

Voxeo CallXML

Voxeo CallXML is a simple markup language with a short learning curve. It was the first XML telephony language with both call control and IVR-like media control. It suits the needs of most telephony applications being deployed today, while allowing for faster development of IVR applications due to its easy-to-learn syntax. CallXML does not require complex Speech Recognition Grammar Specification Version (SRGS) voice grammars in order to operate.

CallXML can initiate new sessions without the need for an originating telephone call. Many Voxeo customers use CallXML to even further lower the cost and complexity of application development. CallXML enables the same type of CPA advantages derived from using CCXML.

Business Logic

Voxeo Outbound IVR applications can receive events with CPA results and take the appropriate action. Unlike "batch" calling systems, Voxeo's outbound capability enables customers to define the business logic associated with the different error tones.

Below are the possible results from CPA:

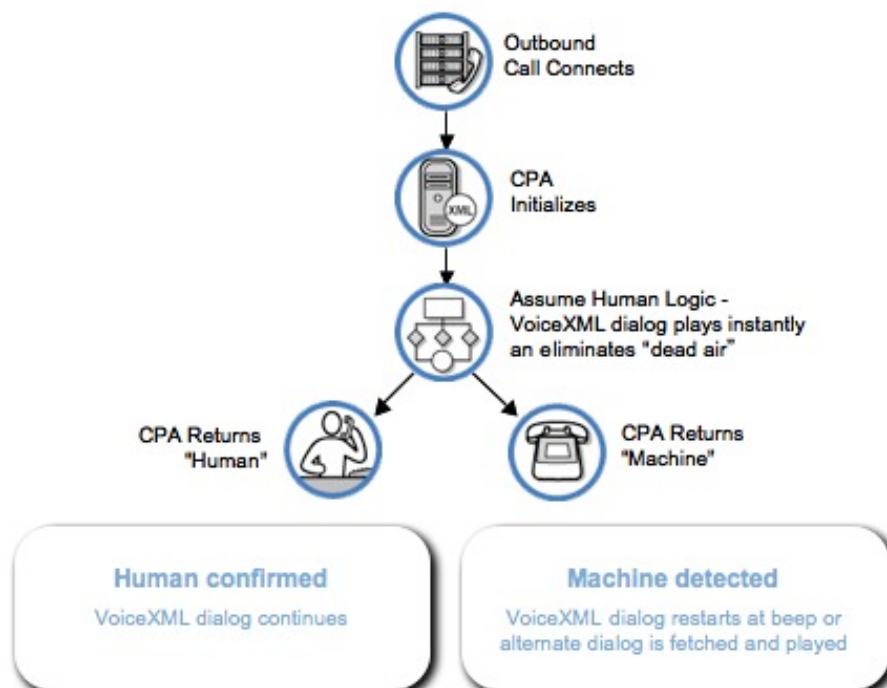
- Human - A 'human' result is determined when the duration of initial voice activity is less than the specified CPA value
- Machine - A 'machine' result is determined when the duration of initial voice activity is greater than the specified CPA value

- Beep - A 'beep' result indicates that CPA's Digital Signal Processing (DSP) has encountered a pure tone
- Modem - CPA has detected a modem
- Faxtone - CPA has detected a fax machine
- SIT - A 'SIT' result indicates that CPA detected Special Information Tones or SIT tones. This generally means that the called number has been disconnected or is no longer in service. Voxeo CPA can also detect TTY and TDD devices for the hearing impaired.
- Unknown - An 'unknown' result is returned when the CPA runtime expires

Call handling decisions can be made in real time based on returned events. For example, a “human” event may trigger an interactive, speech-enabled application while a “machine” event results in the playing of a pre-recorded message.

Assume Human

A Voxeo best practice is to assume that all calls are answered by a live human until proven otherwise, and play a VoiceXML dialog as soon as the call is connected. This eliminates the frustrating dead air a called party may otherwise experience while a “human” vs “machine” decision is made and lowers the number of abandoned calls. CPA events will continue to fire while the VoiceXML dialog is running. If a “machine” is subsequently detected, the dialog can be stopped midstream and started again to avoid the message being clipped by an answering machine, or an entirely different message can be played. This feature is made possible by the call control functionality in CCXML or CallXML, and the ability for Voxeo CPA to remain listening on the call.



Most vendors agree that it is worse to falsely classify a call that is answered by a live person as one that is picked up by an answering machine. This is where the majority of errors occur – and an area where Voxeo offers a clear advantage. Some providers claim that accurate post-connect detection in less than one second is not possible with present day technology and that it is impossible to accurately detect a live speaker 100% of the time. However, using CCXML or CallXML with Voxeo’s “assume human” approach makes these technology limitations a non-issue.

The industry average overall success rate for outbound is between 80% and 85%. By contrast, Voxeo customers using the techniques described typically achieve call classification success rates above 95%.

Scheduling Outbound Calls

Voxeo offers a control mechanism, called Call Setups per Second (CPS), that provides throttling intelligence to Voxeo outbound applications. CPS can be used to ensure a defined ceiling of concurrent calls is not surpassed during a ‘call blast’, while allowing for the highest possible utilization based on the number of available ports and call duration. Ports can be reserved before placing the call or allocated on demand, after the outbound call has been placed and connected.

When using Voxeo hosting, Outbound IVR campaigns can be scheduled and managed from any web browser, or originated based on http-based update. Integration with backend databases can be used to trigger calls based on business and user-defined events. Ports can be reserved before placing the call or allocated on demand, after the outbound call has been placed and connected.

Once an Outbound IVR campaign runs, it’s important to understand exactly how and why a call failed. Unlike VoiceXML, CCXML and CallXML can capture information about the call in the application, giving developers access to fine grain call disposition details including the type of error detected. Since these results are obtained immediately during application run-time, you will be able to produce accurate real-time reporting with no delays.

Focusing on the Customer Experience

Voxeo makes it easy to leverage backend data and business logic in order to provide cohesive service across diverse customer touch points such as voice, SMS, IM and mobile web. Backend application integration can be achieved via Java, SQL, and XML/HTTP.

Voxeo streams platform-level log information to a pool of dedicated logging servers. These servers automatically index all log information for system administration, customer analysis, and ad-hoc trend reporting. At the application layer, VoiceObjects Analyzer uses the same storage to provide more than 50 pre-defined, extensible reports catering to service administrators,

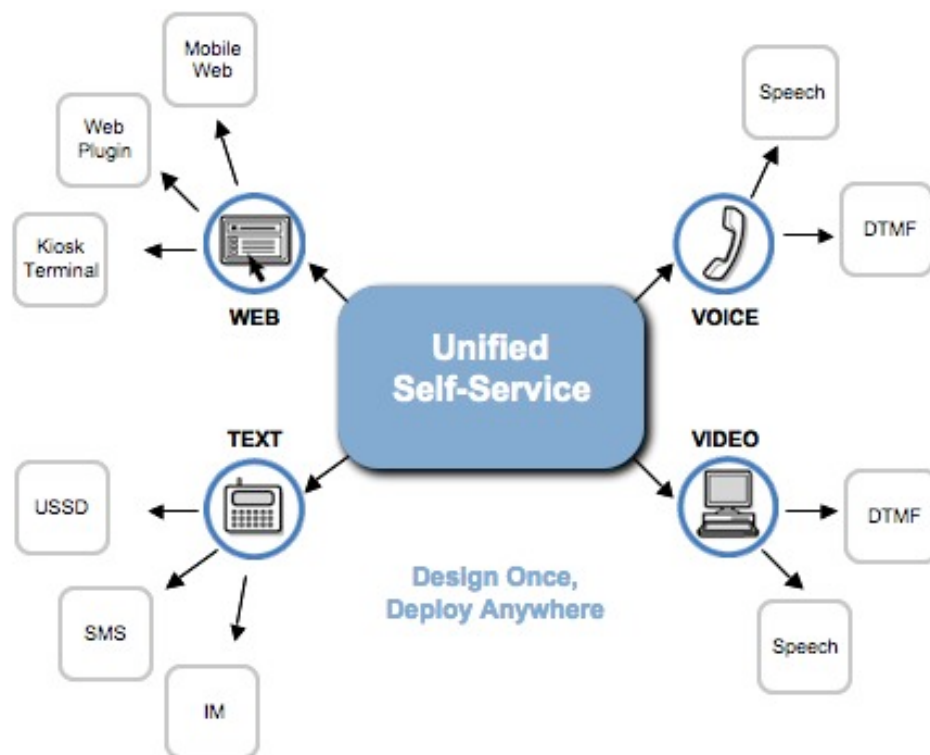
application developers, and business analysts – all built on the fault-resilient database infrastructure within Voxeo’s hosting network.

Voxeo’s VoiceObjects application development and management tool provides real-time reporting and deep analysis of caller behavior, application performance, and transaction success for rapid tuning, improved ROI and a better customer experience.

VoiceObjects integrates with popular business intelligence platforms such as BusinessObjects, and Cognos. Additionally, support for popular ERP and CRM systems, such as SAP, enables truly personalized customer treatment. With VoiceObjects, interactions can automatically adapt to individuals’ preferences, recent interactions, language preferences and more.

Design Once, Deploy Anywhere

Voxeo VoiceObjects facilitates a consistent user interface across all customer service portals with little to no incremental effort; a concept Voxeo calls Unified Self Service™. Using VoiceObjects, a company can build an application once and deploy it across different outbound channels, including voice, IM, SMS and the mobile web. These phone channels can share the underlying dialog flow definition, business logic and backend access, drastically simplifying development, maintenance, and reporting on these services.



Multi-site, Worldwide Hosting

Voxeo is the largest worldwide VoiceXML and CCXML hosting provider and the only one with a 100% uptime guarantee. Multiple, distributed data centers ensure up-time while alleviating congestion on the system should one local or regional area experience traffic spike or an outage that might otherwise impact everyone on the system.

The Voxeo platform is built on SIP from the ground up and is light years ahead of the competition in the delivery of a clean, scalable SIP backbone that brings together diverse applications and devices, eases access to enterprise data and lowers the cost of transferring calls with direct IP to IP connectivity.

Voxeo delivers Inbound and Outbound IVR on the same platform and using the same development and management tools. Voxeo also offers multiple deployment options based on the same platform. Users of both our on-demand hosting and premise platform can leverage their existing investments in Inbound IVR for Outbound IVR applications and vice versa.

The same platform behind Voxeo's IVR hosting infrastructure is available as a premise solution. Customers may even choose a hybrid deployment, in which Voxeo premise and hosting offerings work together seamlessly. For example, a business could deploy a premise solution for their inbound solution and hosting for their outbound campaigns, or use hosting on-demand for bursting and overflow.

5 Summary

Outbound IVR is gaining momentum as companies look for ways to differentiate on customer service, drive new revenue, and lower costs. Outbound IVR can be a valuable component of any customer interaction strategy by enabling effective mass communications, proactive customer support, and targeted marketing.

However, Outbound IVR presents some unique challenges that are not present in the deployment of an Inbound IVR solution. By using the right technologies and employing proven best practices, companies can avoid pitfalls that result in customer frustration.

Voxeo has extensive experience delivering Outbound IVR applications and was the only vendor to receive a perfect scorecard in Datamonitor's June 30, 2008 report on "Hosted Speech and Outbound IVR Services."

Voxeo has hosted standards-driven, Outbound IVR applications on its platform for longer than any provider in the market and understands the unique considerations that are necessary for success. Voxeo support engineers are available around-the-clock, with deep knowledge of the

industry standards and technologies that are critical to the development of a successful outbound application. Chances are, if you've got an Outbound IVR question, we've answered it before. Additionally, Voxeo's free Evolution customer and developer portal is the world's most widely used VoiceXML and CCXML developer community. Evolution provides extensive tutorials, sample applications, sample grammars, discussion forums and developer tools.

Companies and service providers considering Outbound IVR can get started instantly and for free with Voxeo. Contact us today or go to www.voxeo.com/outboundivr.

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